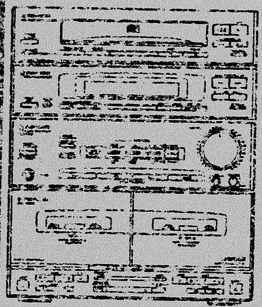
PIONEER

The Art of Entertainment

Service Manual



STEREO CD CASSETTE DECK RECEIVER

XR-P310

XR–P310 HAS FOLLOWING VERSIONS:

Type	Power Requirement	Remarks
KUC	AC120V only	
SD	AC110V, 120–127V, 220V, 240V (switchable)	
YPW	AC240V only	

- **This manual is applicable to the KUC, SD and YPW types.**
- **As to the SD and YPW types, refer to page 102.**

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This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).
When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

1. SAFETY INFORMATION

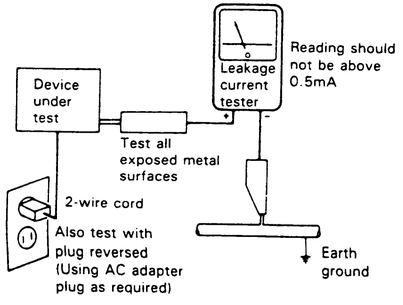
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.


Device under test
Leakage current tester
Reading should not be above 0.5mA
Test all exposed metal surfaces
2-wire cord
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which dose not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

2. DISASSEMBLY

Note 1: Be sure to disconnect the power cord from a AC power line, before mounting or removing parts.

- **When checking the board in XR-P310, remove the parts excepting CD units, cassette mechanism units and their peripheral parts as shown in Fig. 1.**

1. CD player unit (Firstly, remove the disc tray.)
2. CD mounting bracket
3. Rear panel

- **When checking the cassette mechanism unit and surroundings, remove the followings to take out the front panel assembly from the main unit. (See Fig. 1 to 3.)**

1. CD player unit
2. CD mounting bracket
3. Remove the volume assembly by removing the volume control and nut Ⓐ. (See Fig. 2)
4. One fixing screw for head phone jack Ⓒ (See Fig. 3.)
5. One fixing screw for power assembly Ⓓ
6. Six fixing screws for the front panel assembly (See Fig. 2.)
7. Remove the front panel assembly by lifting the front panel assembly hook. (See Fig. 3.)

- **CD player unit is the same as in XR-P500. Refer to the XR-P500 service manual (ARP1996).**

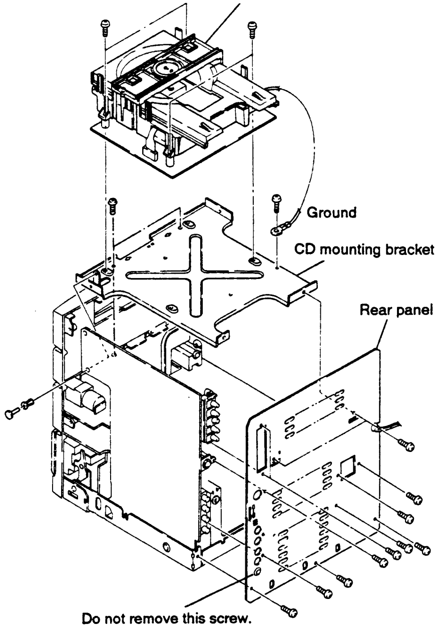


Fig. 1

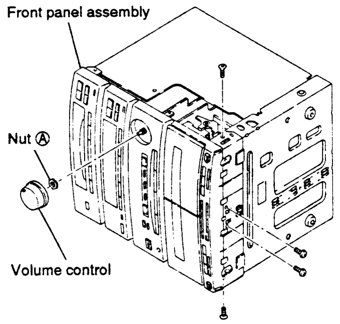


Fig. 2

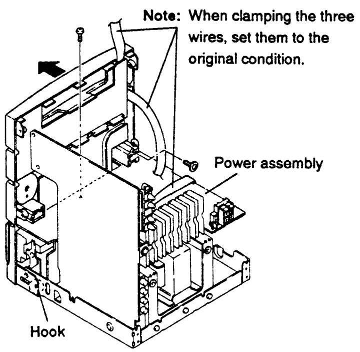

Note: When clamping the three wires, set them to the original condition.

Fig. 3

3. EXPLODED VIEWS, PACKING AND PARTS LIST

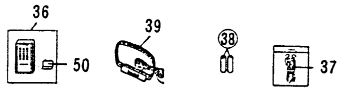
3.1 EXTERIOR

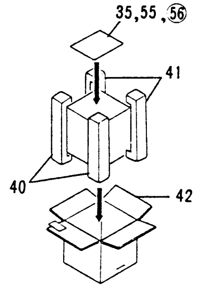
NOTES:

- Parts without part number cannot be supplied.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by " ⊙ " are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

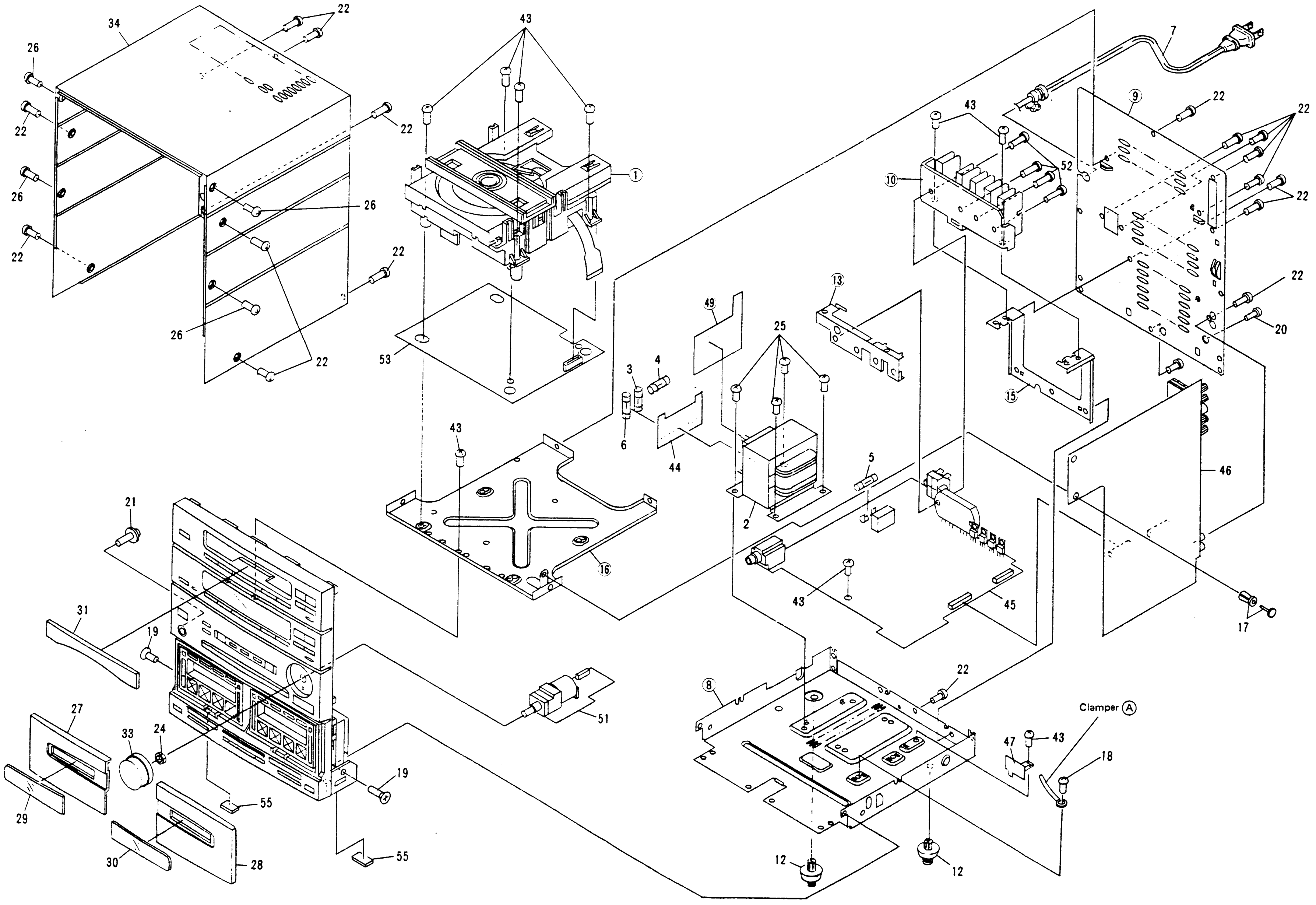
Parts List of Main Unit and Packing

Mark	No.	Description	Part No.
	1	CD player	
⚠	2	Power transformer	ATS1330
⚠	3	FU703 Fuse (1A)	AEK – 119
⚠	4	FU702 Fuse (2A)	AEK – 122
⚠	5	FU701 Fuse (2.5A)	AEK – 123
⚠	6	FU704 Fuse (500mA)	AEK – 136
⚠	7	AC Power cord	ADG1057
	8	Chassis	
	9	Rear panel	
	10	Heat sink	
	11	······	
	12	Foot	REC – 434
	13	Pack holder	
	14	······	
	15	Heat sink holder	
	16	CD holder	
	17	Nylon rivet	AEC1160
	18	Screw	BCZ30P060FZK
	19	Screw	CBZ30P080FMC
	20	Screw	ABA – 222
	21	Screw	ABA1095
	22	Screw	BBZ30P080FZK
	23	Screw	BPZ26P080FMC
	24	Nut	NK90FUC
	25	Screw	VBZ30P060FMC
	26	Screw	VPZ30P080FZK
	27	Cassette panel (L)	AAK2121
	28	Cassette panel (R)	AAK2122
	29	Vinyl chloride door panel (L)	AAK2098
	30	Vinyl chloride door panel (R)	AAK2099
	31	Name plate	AAK2128
	32	······	
	33	VR knob	RAC1566
	34	Bonnet	ANE1294
	35	Operating instructions Operating instructions	ARB1293 ARC1285
	36	Remote control unit	AXD1191
	37	FM antenna	ADH1008
	38	Battery	
	39	Loop antenna	ATB1006
	40	Front pad (L, R)	AHA1427
	41	Rear pad (L, R)	AHA1428
	42	Packing case	AHD2099
	43	Screw	BBZ30P080FMC
⊙	44	TRANS assembly	AWZ3214
⊙	45	POWER assembly	AWZ3235
⊙	46	AF.TUNER assembly	AWZ3359
	47	REGULATOR assembly	AWZ3215
	48	······	
	49	SPACER assembly	AWZ3210
	50	Case	AZA1302
⊙	51	VOLUME assembly	AZW3224
	52	Screw	VBZ30P160FMC
⊙	53	MOTHER BOARD assembly	PWM1375
	54	······	
	55	Rubber sheet	AEB1111
	56	Caution card	





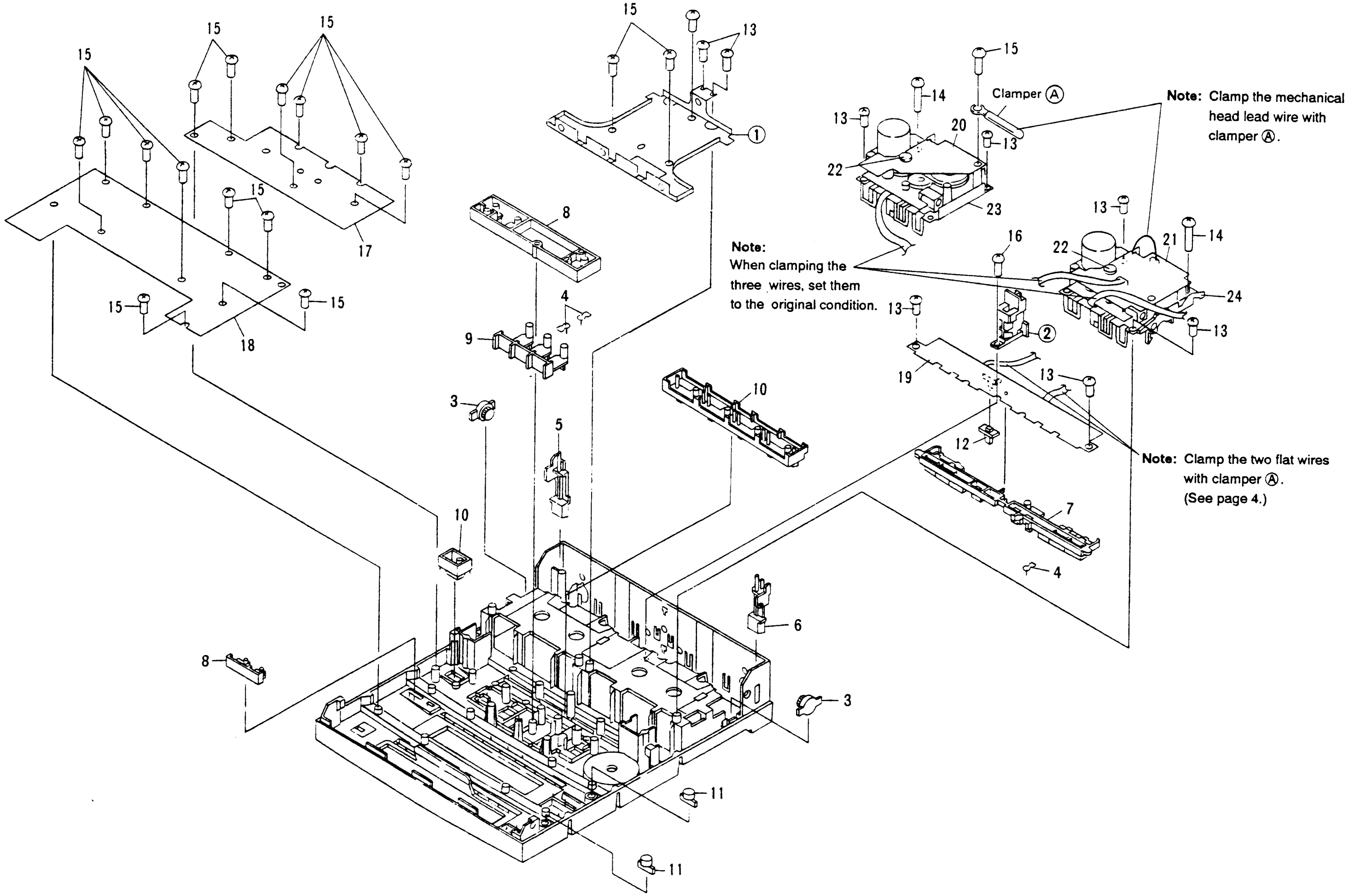
3.1 EXTERIOR


①
⑯
⑨
⑧
Clamper Ⓐ

3.2 FRONT PANEL SECTION (REAR VIEW)

Parts List of Front Panel Section (Rear View)

Mark	No.	Description	Part No.
	1	P.C.B holder	
	2	Mechanism shaft mold	
	3	Damper assembly	AXA1011
	4	Indicator lens	AAK2101
	5	Eject button (L)	AAD1977
	6	Eject button (R)	AAD1978
	7	Deck button assembly	AAD1992
	8	Direct mode button	AAD1974
	9	S.F.C. button	AAD1962
	10	Function button	AAD1966
	11	Gold button	AAD1943
	12	Slide knob	AAE1136
	13	Screw	VPZ30P080FMC
	14	Screw	VPZ30P200FMC
	15	Screw	BPZ26P080FMC
	16	Screw	BPZ30P100FMC
⊙	17	AMP SW assembly	AWZ3237
⊙	18	TX.CD SW assembly	AWZ3238
⊙	19	DECK SW assembly	AWZ3225
⊙	20	DECK − 1 assembly	AWZ3212
⊙	21	DECK − 2 assembly	AWZ3213
	22	Nylon rivet	AEC1160
	23	Mechanism unit	EXK2040
	24	Mechanism unit	EXK2030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Note: Clamp the mechanical head lead wire with clamper Ⓐ.

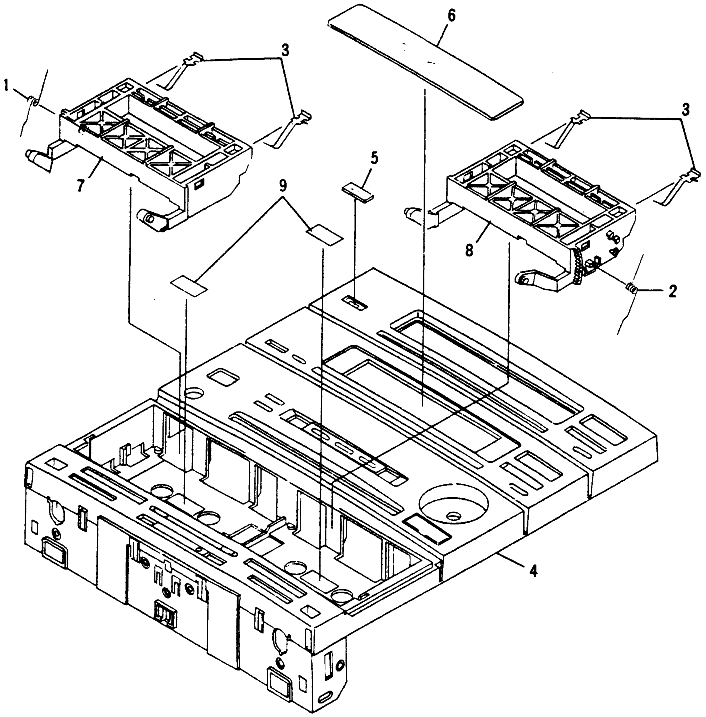
Note: When clamping the three wires, set them to the original condition.

Note: Clamp the two flat wires with clamper Ⓐ. (See page 4.)

3.3 FRONT PANEL SECTION (FRONT VIEW)

Parts List of Front Panel Section (Front View)

Mark	No.	Description	Part No.
	1	Door spring (L)	ABH1070
	2	Door spring (R)	ABH1071
	3	Keep plate	ABK1015
	4	Front panel assembly	AMB1770
	5	Remote control filter	AAK2010
	6	Ornamental plate	AAK2119
	7	Half pocket (L)	AAN1254
	8	Half pocket (R)	AAN1255
	9	Sheet	AAX1301

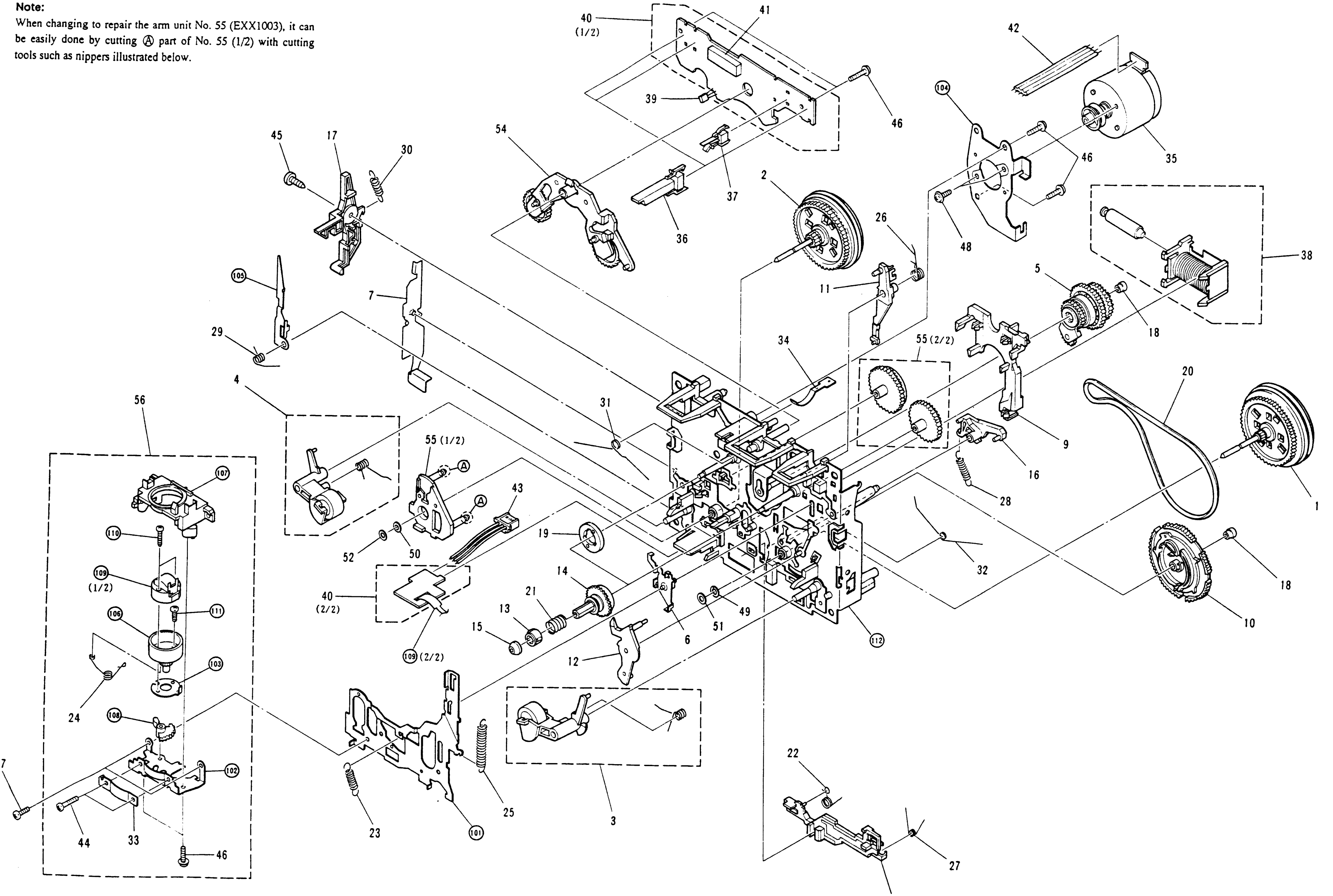


Parts List of 1 Mechanism Unit (EXK2040)

Mark	No.	Description	Part No.
	1	F/W assembly (FWD)	EXA1102
	2	F/W assembly (RVS)	EXA1103
	3	Pinch roller assembly (FWD)	EXA1104
	4	Pinch roller assembly (RVS)	EXA1105
	5	Limitter assembly	EXA1106
	6	Lever assembly	EXA1107
	7	Arm	AZN2063
	8	NR lever	ENV1155
	9	Brake	ENV1157
	10	Cam gear	ENV1158
	11	Rock arm	ENV1159
	12	NR arm	ENV1163
	13	Reel collar	ENV1164
	14	Reel	ENV1170
	15	Reel claw	ENV1178
	16	Arm	ENV1181
	17	Arm	AZN2069
	18	Bush	ENV1184
	19	Magnet	ENV1185
	20	Belt	ENT1015
	21	Spring	EBH1201
	22	Spring	EBH1202
	23	Spring	EBH1203
	24	Spring	EBH1204
	25	Spring	EBH1208
	26	Spring	EBH1209
	27	Spring	EBH1210
	28	Spring	EBH1211
	29	Spring	EBH1413
	30	Spring	EBH1213
	31	Spring	EBH1220
	32	Spring	EBH1256
	33	Spring	EBL1013
	34	Spring	EBL1014
	35	Motor assembly	EXA1195
	36	Switch (Detect)	ESN1003
	37	Switch (Mode)	ESN1004
	38	Solenoid	EXP1005
	39	Hole IC	DN6847SE
	40	P.C. Board	ENX1002
	41	Connector	EKS1013
	42	Wire	EDD1003
	43	Connector	EDE1009
	44	Screw	EBA1020
	45	Screw	EBA1021
	46	Screw (M2 × 8)	ATZ20P080FMC
	47	Screw	BSZ20P050FMC
	48	Screw	PMS26P025FCU
	49	Washer	EBF1008
	50	Washer	EBF1009
	51	Washer	EBF1010
	52	Washer	EBF1011
	53	······	
	54	Arm assembly	EXX1002
	55	Arm assembly	EXX1003
	56	P head assembly	EXX1005
	101	Head base	
	102	Bracket	
	103	Plate	
	104	Bracket	
	105	Arm	
	106	Holder	
	107	Holder	
	108	Gear	
	109	P head	
	110	Screw	
	111	Screw	
	112	Chassis	

3.4 1 MECHANISM UNIT (EXK2040)

Note:
When changing to repair the arm unit No. 55 (EXX1003), it can be easily done by cutting Ⓐ part of No. 55 (1/2) with cutting tools such as nippers illustrated below.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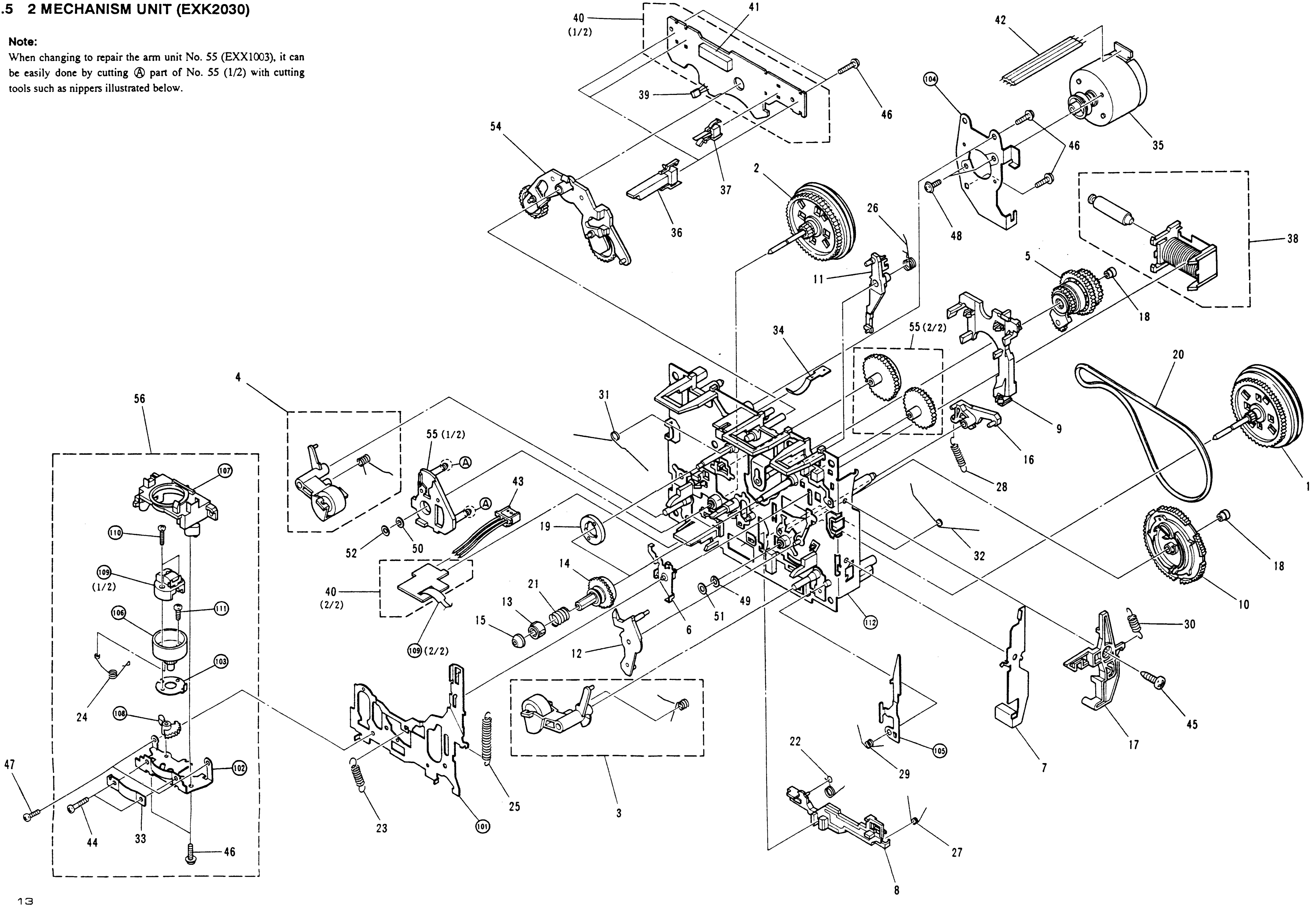
3.5 2 MECHANISM UNIT (EXK2030)

Note:
When changing to repair the arm unit No. 55 (EXX1003), it can be easily done by cutting Ⓐ part of No. 55 (1/2) with cutting tools such as nippers illustrated below.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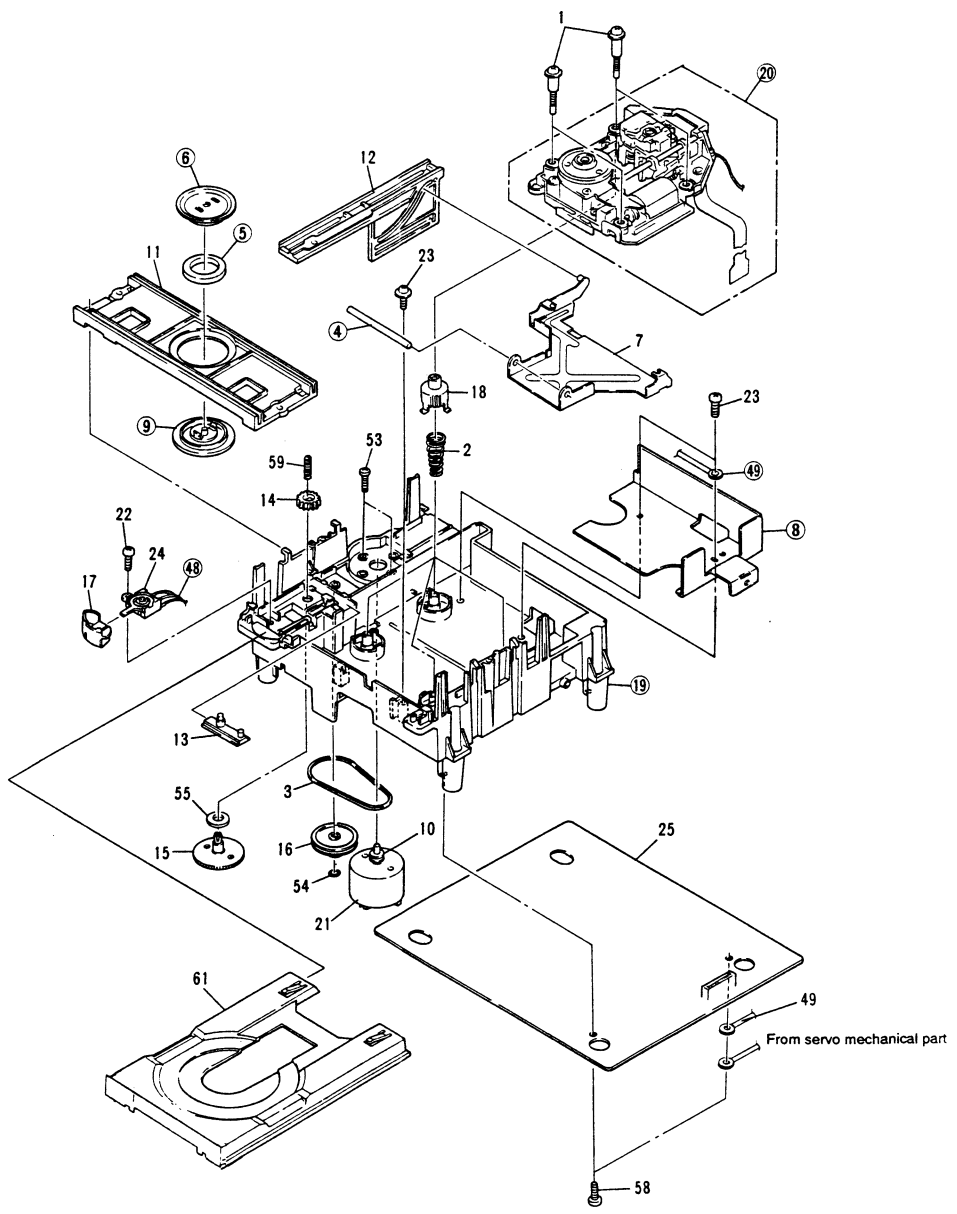
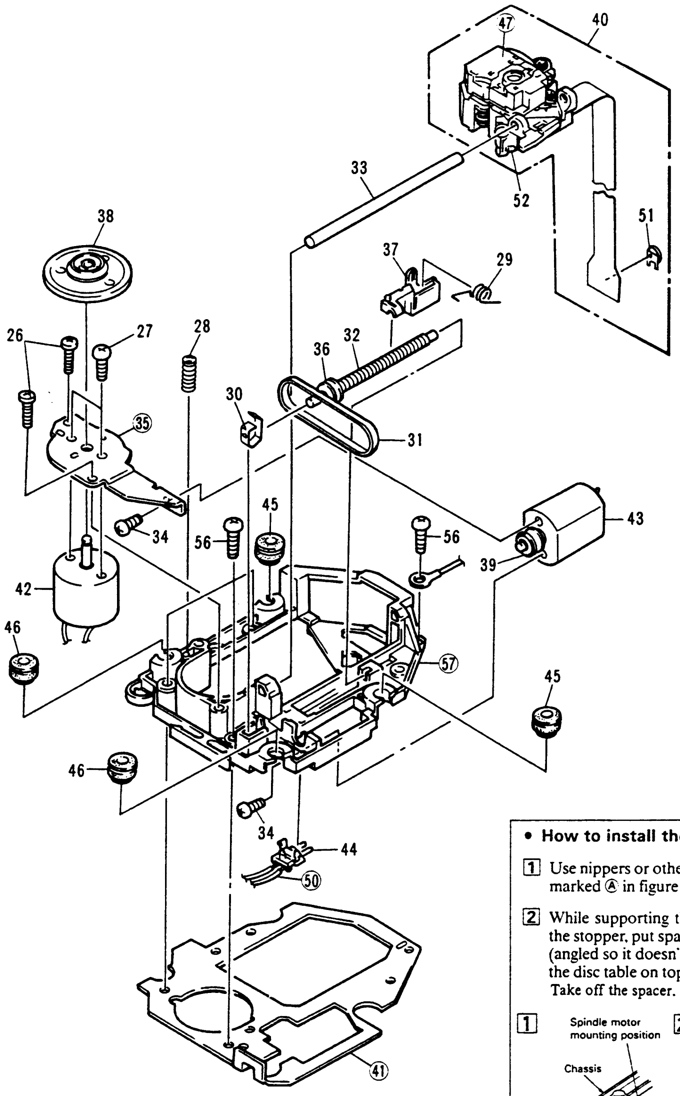
Parts List of 2 Mechanism Unit (EXK2030)

Mark	No.	Description	Part No.
	1	F/W assembly (FWD)	EXA1102
	2	F/W assembly (RVS)	EXA1103
	3	Pinch roller assembly (FWD)	EXA1104
	4	Pinch roller assembly (RVS)	EXA1105
	5	Limitter assembly	EXA1106
	6	Lever assembly	EXA1107
	7	Arm	AZN2064
	8	NR lever	ENV1155
	9	Brake	ENV1157
	10	Cam gear	ENV1158
	11	Rock arm	ENV1159
	12	NR arm	ENV1163
	13	Reel collar	ENV1164
	14	Reel	ENV1170
	15	Reel claw	ENV1178
	16	Arm	ENV1181
	17	Arm	AZN2070
	18	Bush	ENV1184
	19	Magnet	ENV1185
	20	Belt	ENT1015
	21	Spring	EBH1201
	22	Spring	EBH1202
	23	Spring	EBH1203
	24	Spring	EBH1204
	25	Spring	EBH1208
	26	Spring	EBH1209
	27	Spring	EBH1210
	28	Spring	EBH1211
	29	Spring	EBH1412
	30	Spring	EBH1213
	31	Spring	EBH1220
	32	Spring	EBH1256
	33	Spring	EBL1013
	34	Spring	EBL1014
	35	Motor assembly	EXA1195
	36	Switch (Detect)	ESN1003
	37	Switch (Mode)	ESN1004
	38	Solenoid	EXP1005
	39	Hole IC	DN6847SE
	40	P.C. Board	ENX1002
	41	Connector	EKS1012
	42	Wire	EDD1003
	43	Connector	EDE1008
	44	Screw	EBA1020
	45	Screw	EBA1026
	46	Screw (M2 × 8)	ATZ20P080FMC
	47	Screw	BSZ20P050FMC
	48	Screw	PMS26P025FCU
	49	Washer	EBF1008
	50	Washer	EBF1009
	51	Washer	EBF1010
	52	Washer	EBF1011
	53	······	
	54	Arm assembly	EXX1002
	55	Arm assembly	EXX1003
	56	R/P head assembly	EXX1004
	101	Head base	
	102	Bracket	
	103	Plate	
	104	Bracket	
	105	Arm	
	106	Holder	
	107	Holder	
	108	Gear	
	109	R/P head	
	110	Screw	
	111	Screw	
	112	Chassis	

3.6 MECHANISM SECTION

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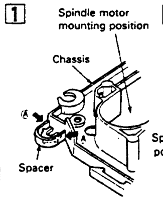
Parts List of Mechanism Section

Mark	No.	Description	Part No.
	1	Float screw (FE)	PBA1042
	2	Coil spring	PBH1085
	3	Rubber belt	PEB1127
	4	Shaft (FE)	
	5	Magnet	
	6	Yoke (FE)	
	7	Swing lever (FE)	PNB1296
	8	Shield plate (FE)	
	9	Clamper S (ABS)	
	10	Motor pulley (POM)	PNW1634
	11	Clamper base (ABS)	PNW1673
	12	Rack (ABS)	PNW1674
	13	Sync plate (POM)	PNW1675
	14	Gear A (POM)	PNW1676
	15	Gear B (POM)	PNW1677
	16	Gear pulley (POM)	PNW1678
	17	Sensor head (ABS)	PNW1679
	18	Slide bush (POM)	PNW1680
	19	Loading base (ABS)	
	20	Servo mechanism assembly	
	21	DC motor/0.75W	PXM1010
	22	Screw	BPZ26P080FMC
	23	Screw	IPZ30P080FMC
	24	Lever switch	DSK1003
	25	Main board assembly	PWZ2043
	26	Screw	BPZ20P080FZK
	27	Screw	JFZ20P025FMC
	28	Ground spring	PBH1009
	29	Drive spring (STEEL)	PBH1084
	30	Plate spring	PBK1057
	31	Belt	PEB1072
	32	Drive screw	PLA1003
	33	Guide bar (STEEL)	PLA1071
	34	Screw	PMZ20P030FMC
	35	Motor base (FE)	
	36	Pulley	PNW1066
	37	Half nut (PLASTIC)	PNW1605
	38	Disk table (PC)	PNW1608
	39	Motor pulley (POM)	PNW1634
	40	Pick - up assembly	PEA1030
	41	Mechanism base	
	42	Spindle DC motor assembly	PEA1028
	43	DC motor/1.7W	PXM1013
	44	Push switch	DSG1014
	45	Floating rubber	PEB1014
	46	Floating rubber	PEB1132
	47	Actuator cover	
	48	Connector assembly (5P)	
	49	Ground lead unit	
	50	Connector assembly	
	51	Semi - fixed VR	PCP1008
	52	Chip capacitor	CKSYF105Z16
	53	Screw	PMZ26P040FMC
	54	Washer	WT26D060D013
	55	Washer	WA62D095D013
	56	Screw	PBZ30P080FMC
	57	Mechanism chassis	
	58	Screw	PPZ30P100FMC
	59	Screw	ZMK20H040FBT
	60	Screw	PPZ30P100FMC
	61	Tray	PNW1682

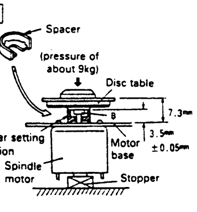
• How to install the disc table

1. Use nippers or other tool to cut the two sections marked Ⓐ in figure 1. Then remove the spacer.
2. While supporting the spindle motor shaft with the stopper, put spacer on top of the motor base (angled so it doesn't touch section Ⓑ), and stick the disc table on top (takes about 9kg pressure). Take off the spacer.

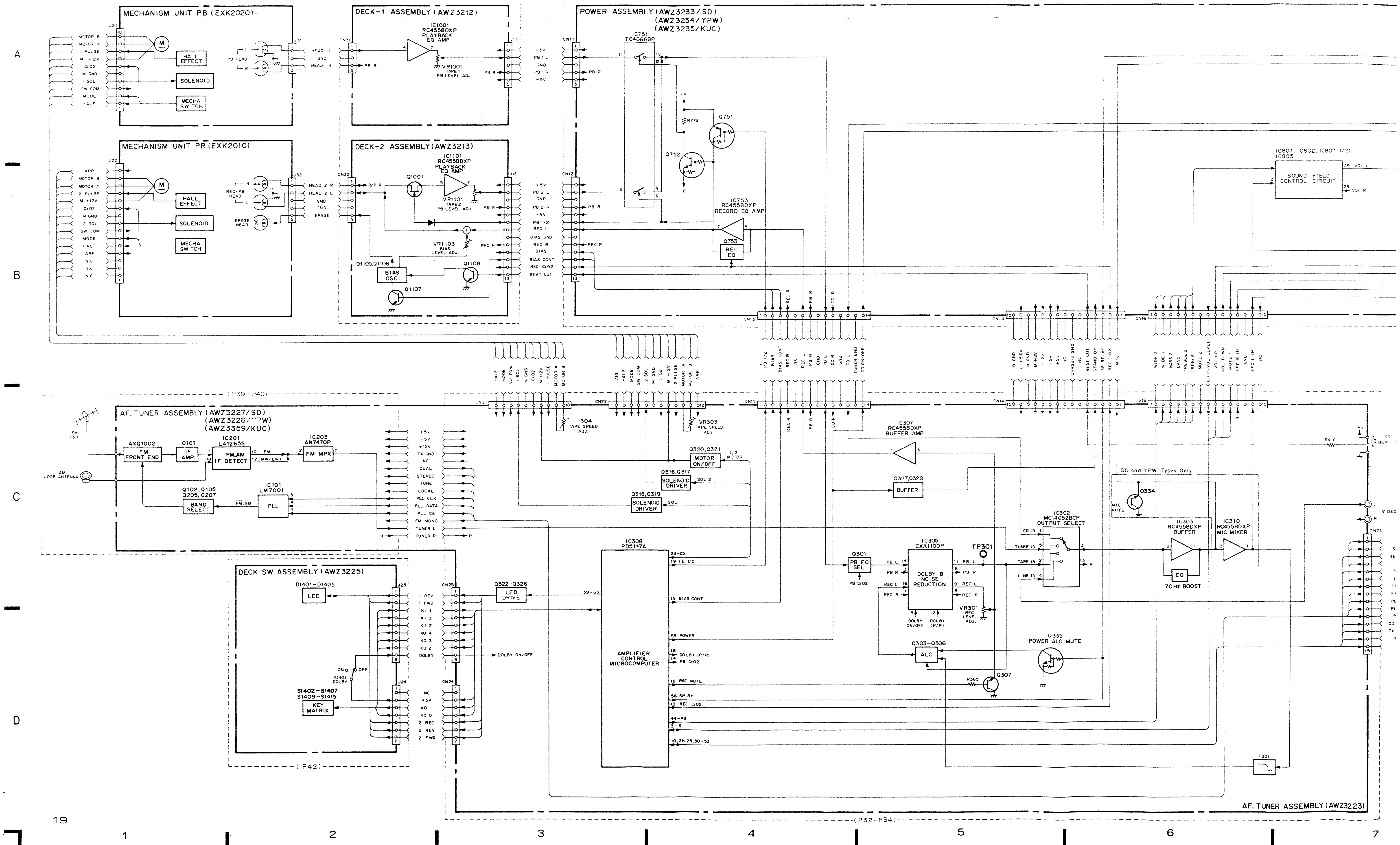
1

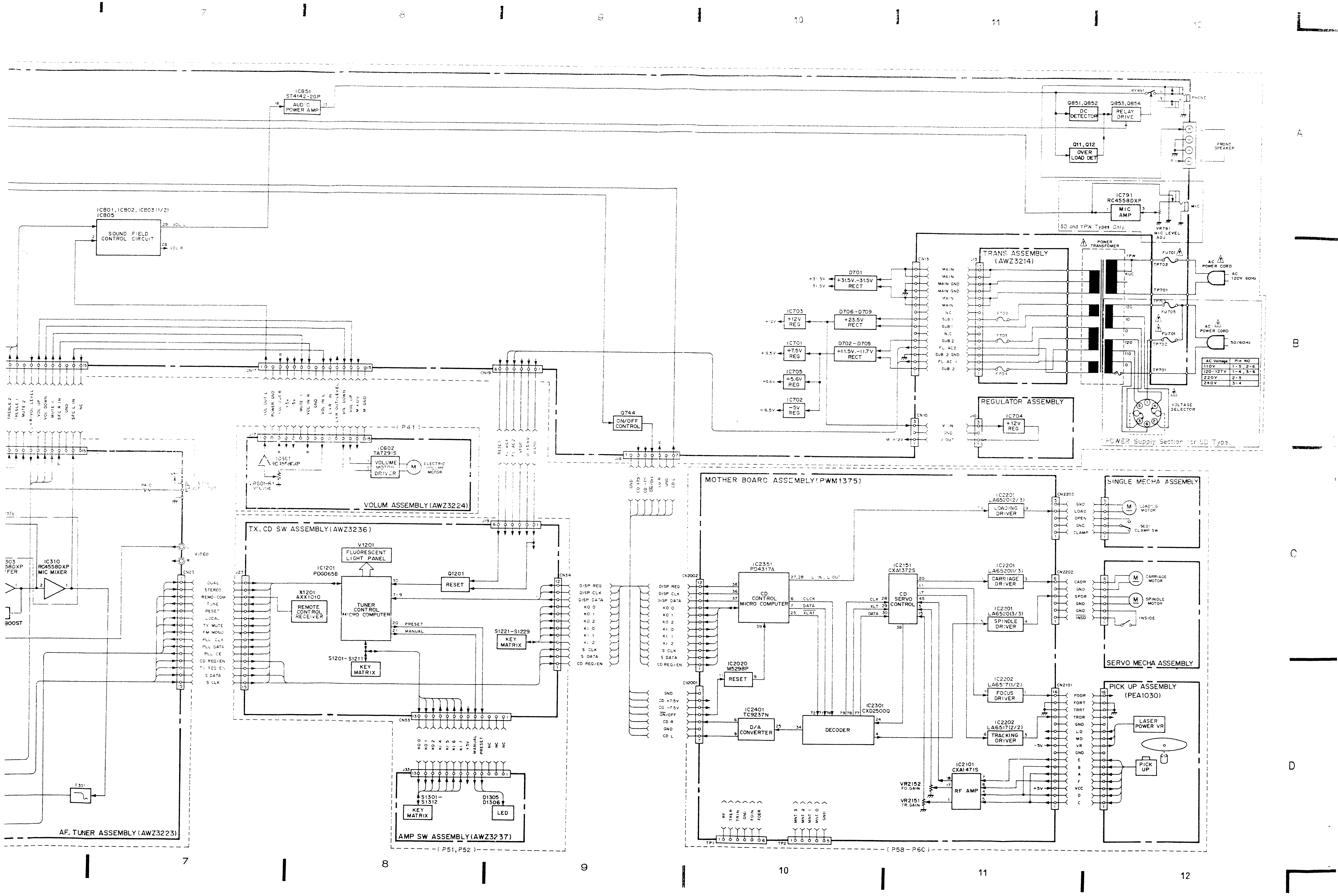

Spindle motor mounting position
Chassis
Ⓐ
A
Spacer

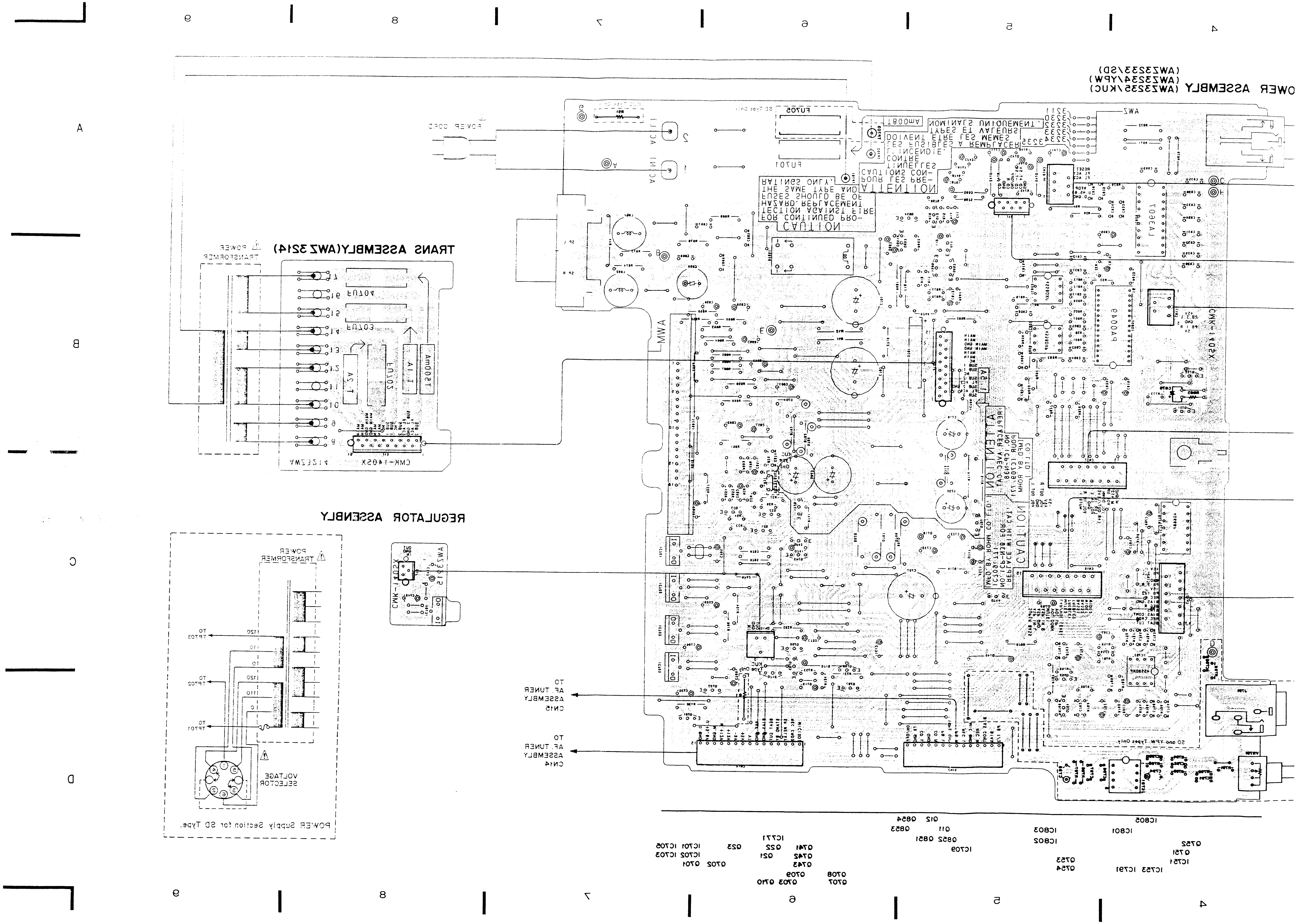
2


Spacer
(pressure of about 9kg)
Disc table
B
7.3mm
Spacer setting position
Motor base
3.5mm ±0.05mm
Spindle motor
Stopper

4. OVERALL SCHEMATIC DIAGRAM


MECHANISM UNIT PB (EXK2020)
MOTOR B
MOTOR A
1 PULSE
M +12V
CrO2
M GND
1 SOL
SW COM
MODE
HALF
HALL EFFECT
SOLENOID
MECHA SWITCH
PB HEAD
HEAD 1 L
GND
HEAD 1 R
MECHANISM UNIT PR (EXK2010)
ARR
2 PULSE
2 SOL
ARF
N.C
REC/PB HEAD
ERASE HEAD
HEAD 2 R
HEAD 2 L
ERASE
DECK-1 ASSEMBLY (AWZ3212)
IC1001 RC4558DXP PLAYBACK EQ AMP
VR1001 TAPE 1 PB LEVEL ADJ.
DECK-2 ASSEMBLY (AWZ3213)
IC1101 RC4558DXP PLAYBACK EQ AMP
Q1001
VR1101 TAPE 2 PB LEVEL ADJ.
VR1103 BIAS LEVEL ADJ.
Q1105, Q1106
BIAS OSC
Q1108
Q1107
POWER ASSEMBLY (AWZ3233/SD) (AWZ3234/YPW) (AWZ3235/KUC)
IC751 TC4066BP
Q751
Q752
R773
IC753 RC4558DXP RECORD EQ AMP
Q753
REC EQ
+5V
PB 1 L
PB 1 R
−5V
PB 2 L
PB 2 R
PB 1/2
REC L
BIAS GND
REC R
BIAS
BIAS CONT
REC CrO2
BEAT CUT
IC801, IC802, IC803 (1/2) IC805
SOUND FIELD CONTROL CIRCUIT
VOL L
VOL R
CN15
CN14
CN16
TUNER GND
CD ON/OFF
D GND
CHASSIS GND
STAND BY
SP RELAY
MIC
WIDE 2
WIDE 1
BASS 2
BASS 1
TREBLE 2
TREBLE 1
MUTE 2
L + R/VOL LEVEL
VOL UP
VOL DOWN
MUTE 1
SFC R IN
SFC L IN
(P39–P40)
AF. TUNER ASSEMBLY (AWZ3227/SD) (AWZ3226/YPW) (AWZ3359/KUC)
FM 75Ω
AM LOOP ANTENNA
AXQ1002 FM FRONT END
Q101 IF AMP
IC201 LA1265S FM, AM IF DETECT
IC203 AN7470P FM MPX
Q102, Q105 Q205, Q207
BAND SELECT
IC101 LM7001
PLL
TX GND
DUAL
STEREO
TUNE
LOCAL
PLL CLK
PLL DATA
PLL CE
FM MONO
TUNER L
TUNER R
CN21
CN22
VR304 TAPE SPEED ADJ.
VR303 TAPE SPEED ADJ.
Q320, Q321 MOTOR ON/OFF
Q316, Q317 SOLENOID DRIVER
Q318, Q319 SOLENOID DRIVER
IC307 RC4558DXP BUFFER AMP
Q327, Q328 BUFFER
SD and YPW Types Only
Q334
MIC MUTE
IC302 MC14052BCP OUTPUT SELECT
CD IN
TUNER IN
TAPE IN
LINE IN
IC303 RC4558DXP BUFFER
EQ
70Hz BOOST
IC310 RC4558DXP MIC MIXER
VIDEO
CN23
DECK SW ASSEMBLY (AWZ3225)
D1401–D1405
LED
S1401 DOLBY
S1402–S1407 S1409–S1415
KEY MATRIX
1 REV
1 FWD
DOLBY
2 REC
2 REV
2 FWD
(P42)
CN25
CN24
Q322–Q326 LED DRIVE
DOLBY ON/OFF
IC308 PD5147A
AMPLIFIER CONTROL MICROCOMPUTER
BIAS CONT
POWER
DOLBY (P/R)
PB CrO2
REC MUTE
SP RY
REC CrO2
Q301 PB EQ SEL
IC305 CXA1100P
DOLBY B NOISE REDUCTION
TP301
VR301 REC LEVEL ADJ.
Q303–Q306
ALC
Q335 POWER ALC MUTE
Q307
R365
F301
AF. TUNER ASSEMBLY (AWZ3223)
(P32–P34)


7
8
9
10
11
12
A
B
C
D
IC851
ST4142-2GP
AUDIO POWER AMP
IC801, IC802, IC803 (1/2)
IC805
SOUND FIELD CONTROL CIRCUIT
VOL L
VOL R
Q851, Q852
DC DETECTOR
Q853, Q854
RELAY DRIVE
Q11, Q12
OVER LOAD DET
RY851
PHONE
FRONT SPEAKER
IC791
RC4558DXP
MIC AMP
MIC
VR791
MIC LEVEL ADJ
SD and YPW Types Only
CN13
D701
+31.5V, -31.5V RECT
+31.5V
-31.5V
IC703
+12V REG
+12V
D706-D709
+23.5V RECT
IC701
+7.5V REG
+6.5V
D702-D705
+11.5V, -11.7V RECT
IC705
+5.6V REG
+5.6V
IC702
-5V REG
-6.5V
TRANS ASSEMBLY
(AWZ3214)
J13
MAIN
MAIN
MAIN GND
MAIN GND
MAIN
MAIN
SUB 1
SUB 1
N.C
SUB 2
FL AC2
SUB 2 GND
FL AC 1
SUB 2
F702
F703
F704
POWER TRANSFORMER
YPW
KUC
FU701
TP702
TP701
FU705
AC POWER CORD
AC 120V 60Hz
50/60Hz
VOLTAGE SELECTOR
AC Voltage | Pin NO
110V | 1-5, 2-6
120-127V | 1-4, 3-6
220V | 2-5
240V | 3-4
POWER Supply Section for SD Type
CN10
V IN
GND
V OUT
M +12V
REGULATOR ASSEMBLY
J10
IC704
+12V REG
CN19
CN17
Q744
ON/OFF CONTROL
J16
TREBLE 2
TREBLE 1
MUTE 2
L+R/VOL LEVEL
VOL DOWN
VOL UP
MUTE 1
SFC R IN
GND
SFC L IN
NC
VOL OUT L
POWER GND
VOL OUT R
+5V
MUTE 1
VOL IN R
GND
VOL IN L
L+R IN
L+R OUT LEVEL
VOL DOWN
VOL UP
M +12V
M GND
RESET
FL AC1
FL AC2
VFUP
D GND
(P41)
J17
IOSC1
RC4558DXP
RG01-R1
VOL/CNC
IC602
TA7291S
VOLUME MOTOR DRIVER
ELECTRIC VOLUME MOTOR
VOLUM ASSEMBLY (AWZ3224)
GND
CD +7.5V
CD -7.5V
ON/OFF
CD R
GND
CD L
TX. CD SW ASSEMBLY (AWZ3236)
J19
V1201
FLUORESCENT LIGHT PANEL
IC1201
PD6065B
X1201
AXX1010
REMOTE CONTROL RECEIVER
TUNER CONTROL MICRO COMPUTER
Q1201
RESET
PRESET
MANUAL
S1221-S1229
KEY MATRIX
S1201-S1211
KEY MATRIX
J21
CN34
DISP REQ
DISP CLK
DISP DATA
KO 0
KO 1
KO 2
KI 0
KI 1
KI 2
S CLK
S DATA
CD REQ/EN
CN33
KO 0
KO 1
KO 2
KI 4
KI 5
KI 6
KI 7
+5V
MANUAL
PRESET
NC
NC
NC
J33
S1301-S1312
KEY MATRIX
D1305
D1306
LED
AMP SW ASSEMBLY (AWZ3237)
(P51, P52)
IC303
4558DXP
FFER
IC310
RC4558DXP
MIC MIXER
BOOST
VIDEO
CN23
DUAL
STEREO
REMO-COM
TUNE
RESET
LOCAL
TX MUTE
FM MONO
PLL CLK
PLL DATA
PLL CE
CD REQ/EN
TX REQ/EN
S DATA
S CLK
F301
AF. TUNER ASSEMBLY (AWZ3223)
MOTHER BOARD ASSEMBLY (PWM1375)
CN2002
DISP REQ
DISP CLK
DISP DATA
KO 0
KO 1
KO 2
KI 0
KI 1
KI 2
S CLK
S DATA
CD REQ/EN
IC2351
PD4317A
CD CONTROL MICRO COMPUTER
L IN, L OUT
CLCK
DATA
XLAT
IC2151
CXA1372S
CD SERVO CONTROL
CLK
XLT
DATA
IC2020
M5298P
RESET
CN2001
GND
CD +7.5V
CD -7.5V
ON/OFF
CD R
GND
CD L
IC2401
TC9237N
D/A CONVERTER
IC2301
CXD2500Q
DECODER
IC2201
LA6520 (2/3)
LOADING DRIVER
IC2201
LA6520 (1/3)
CARRIAGE DRIVER
IC2201
LA6520 (3/3)
SPINDLE DRIVER
IC2202
LA6517 (1/2)
FOCUS DRIVER
IC2202
LA6517 (2/2)
TRACKING DRIVER
IC2101
CXA1471S
RF AMP
VR2152
FO.GAIN
VR2151
TR.GAIN
+5V
TP1
RF
TRIN
TRIN
GND
FOIN
FOER
TP2
MNT 3
MNT 2
MNT 1
MNT 0
GND
(P58-P60)
CN2203
GND
LOAD
OPEN
GND
CLAMP
SINGLE MECHA ASSEMBLY
LOADING MOTOR
S601
CLAMP SW
CN2202
CADR
GND
SPDR
GND
GND
INSD
CARRIAGE MOTOR
SPINDLE MOTOR
INSIDE
SERVO MECHA ASSEMBLY
CN2101
FODR
FORT
TRRT
TRDR
GND
LD
MD
VR
GND
E
B
A
F
VCC
D
C
PICK UP ASSEMBLY
(PEA1030)
LASER POWER VR
PICK UP

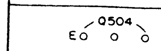
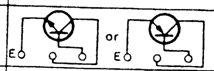
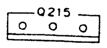
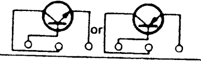
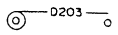
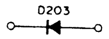
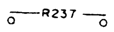
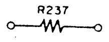
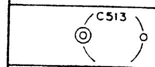
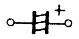
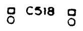
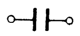

POWER ASSEMBLY (AWZ3235/KUC) (AWZ3234/YPW) (AWZ3233/SD)
TRANS ASSEMBLY(AWZ3214)
REGULATOR ASSEMBLY
POWER TRANSFORMER
POWER CORD
AC IN
FU701
FU702
FU703
FU704
FU705
Am0081
Am005T
CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACEMENT FUSES SHOULD BE OF THE SAME TYPE AND RATINGS ONLY.
ATTENTION
POUR LES PRECAUTIONS CONTRE L'INCENDIE, LES FUSIBLES A REMPLACER DOIVENT ETRE LES MEMES TYPES ET VALEURS NOMINALS UNIQUEMENT.
CAUTION
REPLACE WITH IC109 MADE BY ROHM CO. LTD.
ATTENTION
REMPLACER AVEC IC109 FABRIQUE PAR ROHM CO. LTD.
CMK-1405X
CMK-1402X
AWZ3214
AWZ3215
MWA
AWZ
LA3600
PA0006
SD and YPW Types Only
SD Type Only
KUC Type Only
TO AF TUNER ASSEMBLY CN15
TO AF TUNER ASSEMBLY CN14
TO TP701
TO TP702
TO TP703
VOLTAGE SELECTOR
POWER Supply Section for SD Type.
A
B
C
D
9
8
7
6
5
4
IC805
IC801
IC803
IC802
Q752
Q751
IC751
IC753 IC791
Q753
Q754
Q12 Q854
Q11 Q853
Q852 Q851
IC709
IC771
Q22
Q21
Q23
Q741
Q742
Q743
Q708
Q707
Q709
Q703 Q710
IC701 IC705
IC702 IC703
Q702 Q701

5. SCHEMATIC DIAGRAMS AND P.C. BOARD PATTERNS

5.1 POWER (AWZ3235), TRANS (AWZ3214), LEGULATOR ASSEMBLY

NOTE

1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

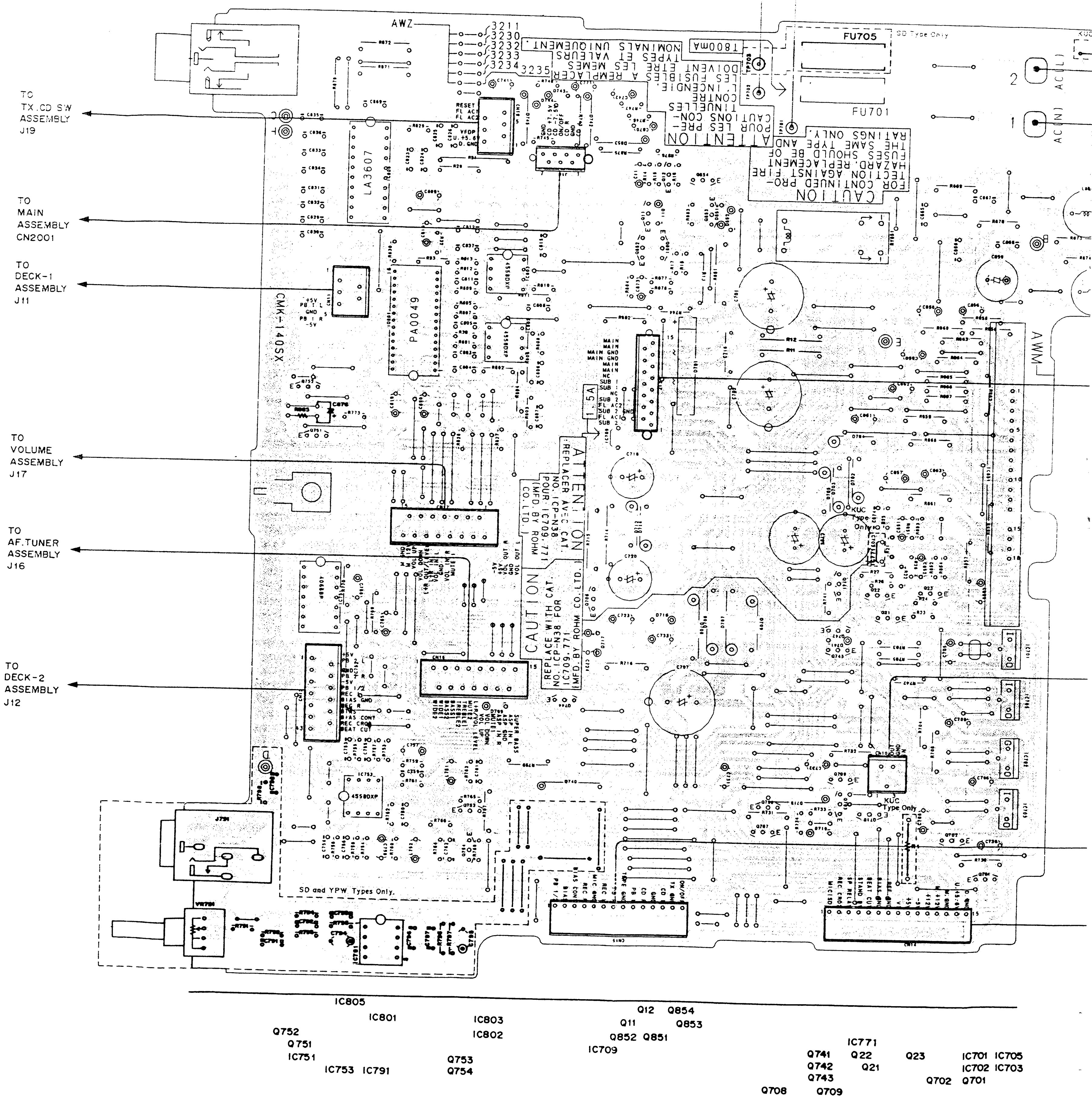
P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
		Transistor
		Radiator type transistor
		Diode
		Resistor
		Capacitor (Polarity)
		Capacitor (Non-polarity)

Others

P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

3. The capacitor terminal marked with ◎ (double circles) shows negative terminal.
4. The diode terminal marked with ◎ (double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

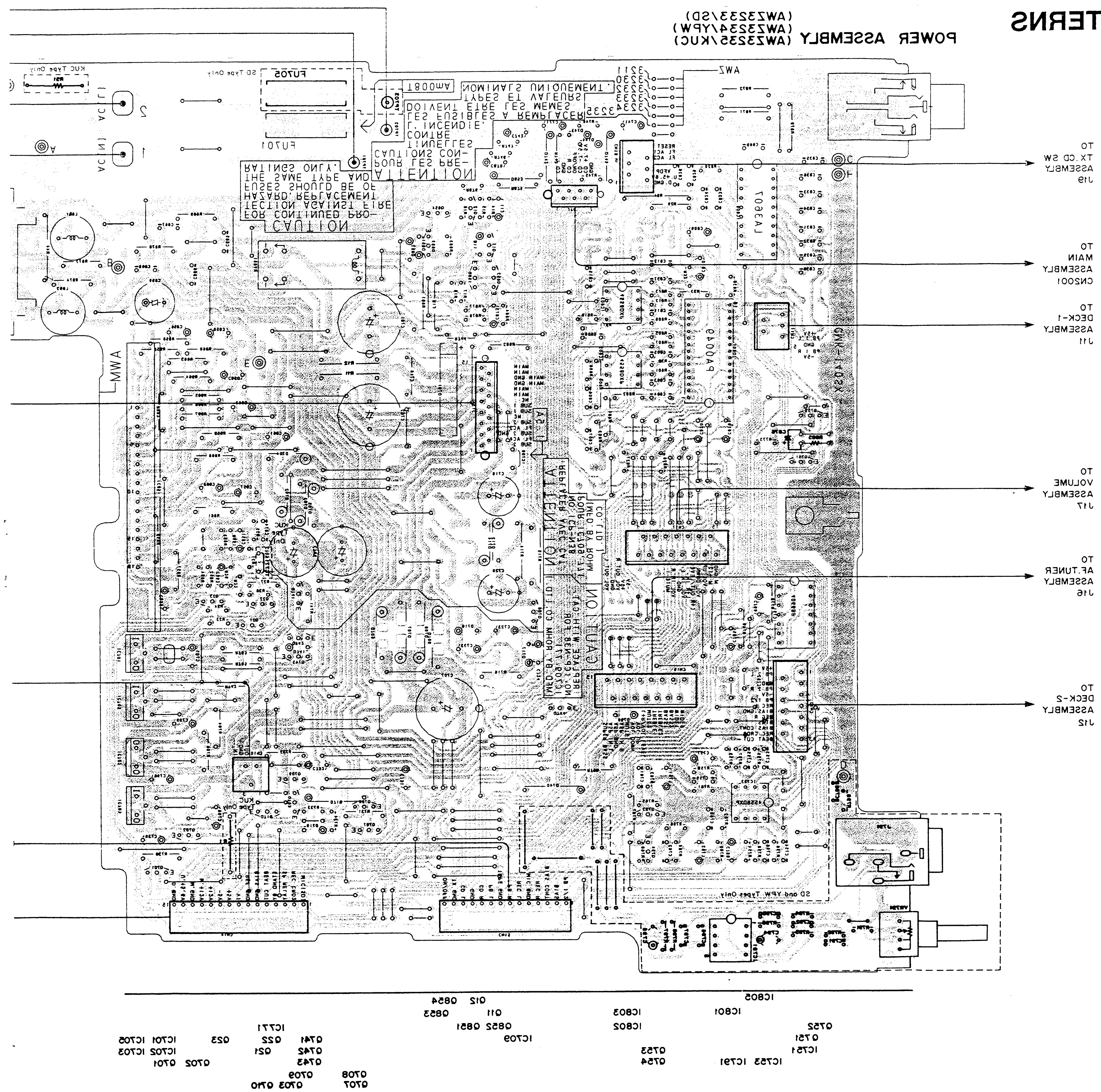
POWER ASSEMBLY (AWZ3233/SD) (AWZ3234/YPW) (AWZ3235/KUC)


TO TX.CD SW ASSEMBLY J19
TO MAIN ASSEMBLY CN2001
TO DECK-1 ASSEMBLY J11
TO VOLUME ASSEMBLY J17
TO AF.TUNER ASSEMBLY J16
TO DECK-2 ASSEMBLY J12
AWZ-3211 3230 3232 3233 3234 3235
T800mA
FU705
SD Type Only
FU701
AC(L) 2
AC(N) 1
CAUTION FOR CONTINUED PRO-TECTION AGAINST FIRE HAZARD. REPLACEMENT FUSES SHOULD BE OF THE SAME TYPE AND RATINGS ONLY.
ATTENTION POUR LES PRE-CAUTIONS CON-TINUELLES CONTRE L'INCENDIE, LES FUSIBLES A REMPLACER DOIVENT ETRE LES MEMES TYPES ET VALEURS NOMINALS UNIQUEMENT.
LA3607
PA0049
CMK-140SX
1.5A
CAUTION REPLACE WITH CAT. NO. CP-N38 FOR IC709 (MFD. BY ROHM CO. LTD.)
ATTENTION REPLACER AVEC CAT. NO. CP-N38 POUR IC709 (MFD. BY ROHM CO. LTD.)
KUC Type Only
AWM
4558DXP
J791
VR791
SD and YPW Types Only.
IC805
IC801
IC803
IC802
Q752
Q751
IC751
IC753
IC791
Q753
Q754
Q12
Q854
Q11
Q853
Q852
Q851
IC709
IC771
Q741
Q22
Q23
IC701
IC705
Q742
Q21
IC702
IC703
Q743
Q702
Q701
Q708
Q709
Q707
Q703
Q710

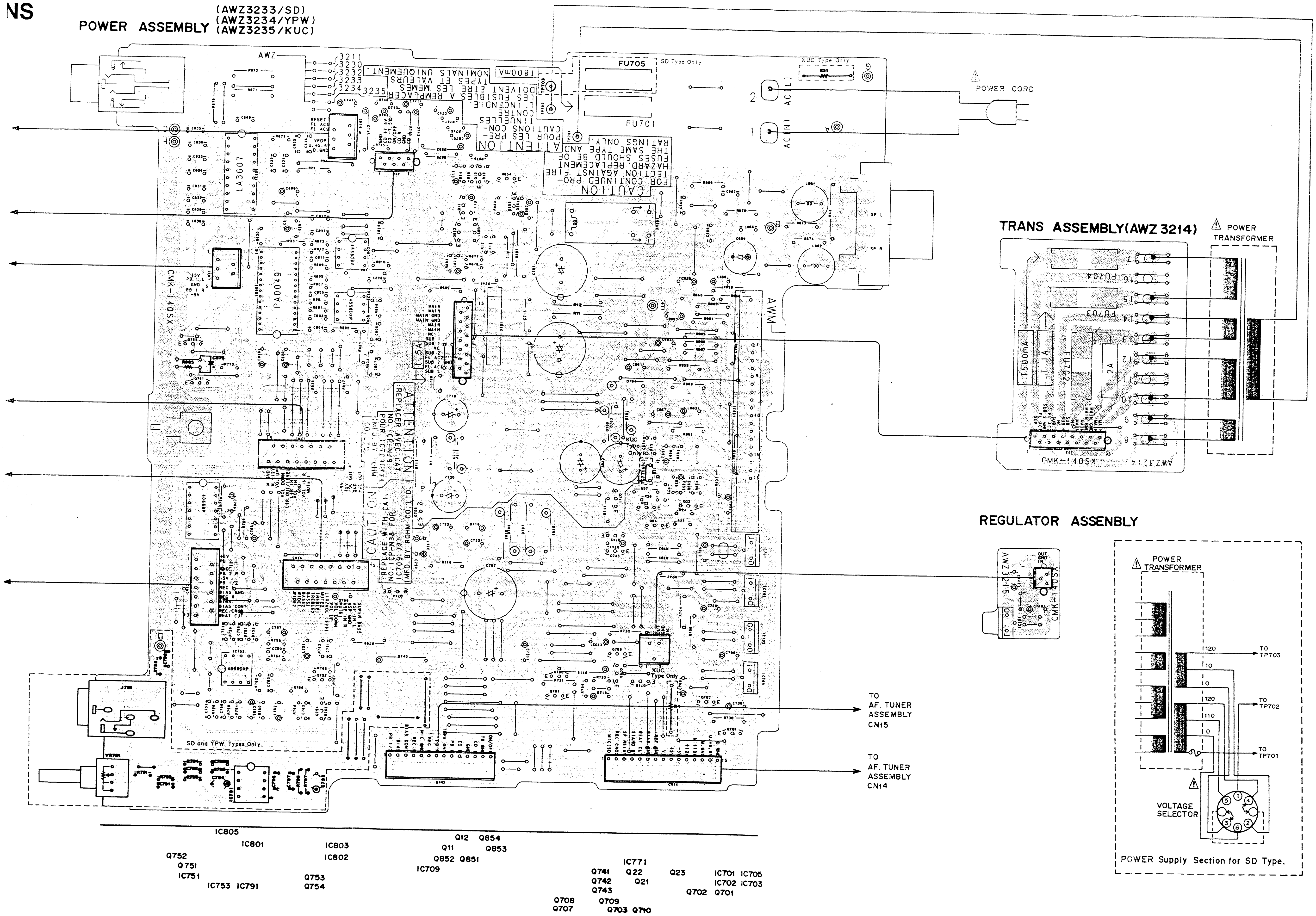
5. SCHEMATIC DIAGRAMS AND P.C. BOARD PATTERNS

5.1 POWER (AWZ3235), TRANS (AWZ3214), LEGULATOR ASSEMBLY

This P.C.B. connection diagram is viewed from the foil side.


POWER ASSEMBLY (AWZ3235/KUC)
(AWZ3234/YPW)
(AWZ3233/SD)
AWZ
FU705
FU701
SD Type Only
KUC Type Only
CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACEMENT FUSES SHOULD BE OF THE SAME TYPE AND RATINGS ONLY.
ATTENTION
POUR LES PRECAUTIONS CONTINUELLES CONTRE L'INCENDIE LES FUSIBLES A REMPLACER DOIVENT ETRE LES MEMES TYPES ET VALEURS NOMINALES UNIQUEMENT.
AWM008T
LA6507
PA0009
MWA
SD and YPW Types Only
TO TX.CD SW ASSEMBLY J19
TO MAIN ASSEMBLY CN2001
TO DECK-1 ASSEMBLY J11
TO VOLUME ASSEMBLY J17
TO AF.TUNER ASSEMBLY J16
TO DECK-2 ASSEMBLY J12
IC805
Q12 Q854
Q11 Q853
IC803 IC801
Q851 Q852 IC802
IC771
IC709
Q752
Q751
IC751
IC705 IC701 Q23 Q22 Q741
IC703 IC702 Q21 Q742
Q701 Q702 Q743
Q709 Q708
Q710 Q703 Q707
Q753
Q754
IC791 IC753

NS



POWER ASSEMBLY (AWZ3233/SD) (AWZ3234/YPW) (AWZ3235/KUC)

TRANS ASSEMBLY (AWZ 3214)

REGULATOR ASSENBLY

POWER Supply Section for SD Type.

4
5
6
7
8
9
A
B
C
D
AWZ
3211
3230
3232
3233
3234
3235
NOMINALS UNIQUEMENT.
TYPES ET VALEURS
DOIVENT ETRE LES MEMES
LES FUSIBLES A REMPLACER
L'INCENDIE.
CONTRE
TINUELLES
CAUTIONS CON-
POUR LES PRE-
ATTENTION
T800mA
TP703
TP702
TP701
FU705
SD Type Only
FU701
CAUTION
FOR CONTINUED PRO-
TECTION AGAINST FIRE
HAZARD, REPLACEMENT
FUSES SHOULD BE OF
THE SAME TYPE AND
RATINGS ONLY.
KUC Type Only
R51
POWER CORD
2
AC(L)
1
AC(N)
RESET
FL AC1
FL AC2
VFDP
U. +5.6V
D. GND
LA3607
PA0049
CMK-140SX
SP L
SP R
AWM
1.5A
MAIN
SUB 1
NC
SUB 2
FL AC2
SUB 2 GND
FL AC1
ATTENTION
REPLACER AVEC CAT.
NO. ICP-N38
POUR IC709, 771
(MFD. BY ROHM
CO. LTD.
CAUTION
REPLACE WITH CAT.
NO. ICP-N38 FOR
IC709, 771
(MFD. BY ROHM CO. LTD.)
XUC Type Only
KUC Type Only
4558DXP
J791
VR791
SD and YPW Types Only.
TO AF. TUNER ASSEMBLY CN15
TO AF. TUNER ASSEMBLY CN14
SUPER BASS
ASP IN L
ASP GND
ASP IN R
MUTE 1
VOL DOWN
VOL UP
POWER TRANSFORMER
FU704
FU703
FU702
T500mA
T 1A
T 1.2A
CMK-140SX
AWZ3214
AWZ3215
CMK-140SX
OUT
GND
IN
POWER TRANSFORMER
120
10
0
120
110
0
TO TP703
TO TP702
TO TP701
VOLTAGE SELECTOR
IC805
IC801
IC803
IC802
Q12
Q854
Q11
Q853
Q852
Q851
IC709
Q752
Q751
IC751
IC753
IC791
Q753
Q754
IC771
Q741
Q22
Q742
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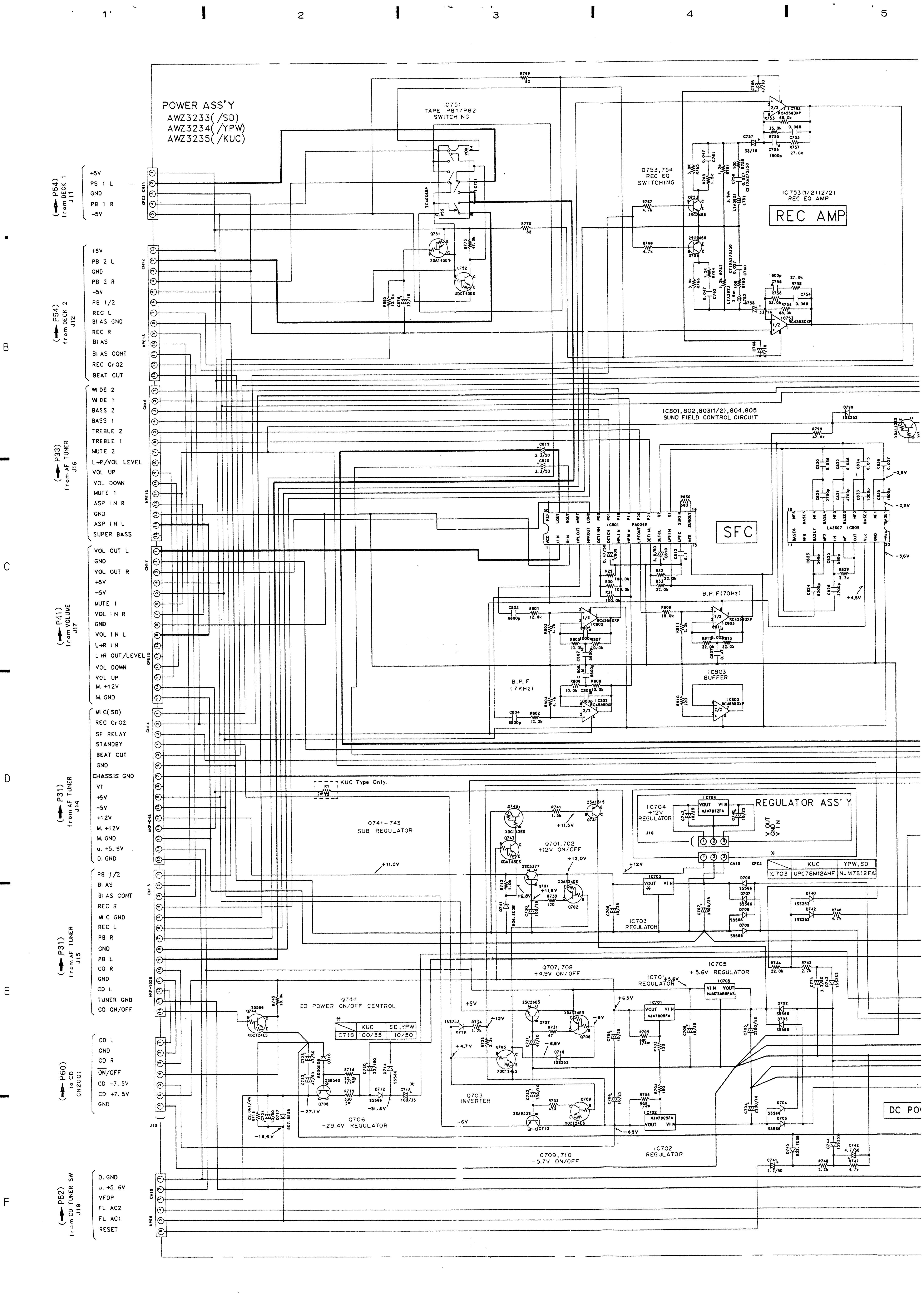
Q23
IC701
IC705
IC702
IC703
Q702
Q701
Q708
Q707
Q709
Q703
Q710


1
2
3
4
5
POWER ASS'Y
AWZ3233(/SD)
AWZ3234(/YPW)
AWZ3235(/KUC)
(→P54) from DECK 1 J11
+5V
PB 1 L
GND
PB 1 R
-5V
KPE5 CN11
(→P54) from DECK 2 J12
+5V
PB 2 L
GND
PB 2 R
-5V
PB 1/2
REC L
BIAS GND
REC R
BIAS
BIAS CONT
REC CrO2
BEAT CUT
CN12 KPE13
(→P33) from AF TUNER J16
WIDE 2
WIDE 1
BASS 2
BASS 1
TREBLE 2
TREBLE 1
MUTE 2
L+R/VOL LEVEL
VOL UP
VOL DOWN
MUTE 1
ASP IN R
GND
ASP IN L
SUPER BASS
CN16 KPE15
(→P41) from VOLUME J17
VOL OUT L
GND
VOL OUT R
+5V
-5V
MUTE 1
VOL IN R
GND
VOL IN L
L+R IN
L+R OUT/LEVEL
VOL DOWN
VOL UP
M.+12V
M.GND
CN17 KPE15
(→P31) from AF TUNER J14
MIC(SD)
REC CrO2
SP RELAY
STANDBY
BEAT CUT
GND
CHASSIS GND
VT
+5V
-5V
+12V
M.+12V
M.GND
u.+5.6V
D.GND
CN14 AKP-048
(→P31) from AF TUNER J15
PB 1/2
BIAS
BIAS CONT
REC R
MIC GND
REC L
PB R
GND
PB L
CD R
GND
CD L
TUNER GND
CD ON/OFF
CN15 AKP-1056
(→P60) to CD CN2001
CD L
GND
CD R
ON/OFF
CD -7.5V
CD +7.5V
GND
J18
(→P52) from CD TUNER SW J19
D.GND
u.+5.6V
VFDP
FL AC2
FL AC1
RESET
CN19 KPE6
B
C
D
E
F
IC751 TAPE PB1/PB2 SWITCHING
TC4066BP
VDD
VSS
IC751
Q751 XDA143ES
Q752 XDC143ES
R769 82
R770 82
R773 47.0k
R885 10.0k
C876 22/16
Q753,754 REC EQ SWITCHING
Q753 2SC2458
Q754 2SC2458
R767 4.7k
R768 4.7k
IC753(1/2)(2/2) REC EQ AMP
REC AMP
IC753 RC4558DXP
R753 68.0k
R755 33.0k
C753 0.068
R757 27.0k
C755 1800p
C757 33/16
C765 47/10
C761
C759
L751 LTA3923J
C760
C762
R765
R766
R783
R784
R781
R782
R786
R759
R760
R758
C756 1800p
R756 33.0k
R754 68.0k
C754 0.068
C758 27.0k
C766
IC801,802,803(1/2),804,805 SUND FIELD CONTROL CIRCUIT
IC801 PA0049
SFC
C819 3.3/50
C820 3.3/50
R830 560
C809 0.47/50
C810 6.8/50
C812 0.1
R29 100.0k
R30 100.0k
R31 100.0k
R32 22.0k
R33 22.0k
B.P.F(70Hz)
R809 18.0k
IC803 RC4558DXP
R811
C811
R812 22.0k
R813 22.0k
C803 6800p
R801 12.0k
IC802 RC4558DXP
R803 4.7k
R805 10.0k
R807 10.0k
C807 3600p
C808 3600p
R806 10.0k
R808 10.0k
B.P.F (7KHz)
C804 6800p
R802 12.0k
R804 4.7k
IC803 BUFFER
R810 220
IC805 LA3607
C830 0.039
C832 0.068
C834 0.015
C836 0.027
C829 2700p
C831 4700p
C833 1000p
C835 1800p
C823 560p
C825 560p
C824 8200p
C826 2700p
R829 2.2k
R799 47.0k
D799 1SS252
XDA143ES
-0.9V
-0.2V
-3.6V
+4.5V
KUC Type Only.
R1 2W
Q741-743 SUB REGULATOR
+11.0V
Q742 XDC143ES
Q743 XDA143ES
R741 1.5k
Q741 2SA1515
+11.5V
Q701,702 +12V ON/OFF
+12.0V
2SC3377 Q701
XDA124ES Q702
+11.8V
+6.8V
R742 10k
R750 120
D741 RD6.8ESB
C730 100/16
C708 10/25
IC704 +12V REGULATOR
IC704 NJM7812FA
VOUT VIN
C747 10/25
C748 10/25
REGULATOR ASS'Y
V OUT
GND
V IN
J10
CN10 KPE3
+12V
IC703
VOUT VIN
IC703 REGULATOR
C707 3300/25
D706 S5566
D707 S5566
D708 S5566
D709 S5566
D740 1SS252
D742 1SS252
R746 4.7k
R744 22.0k
R743 2.7k
C771 3.3/50
D743 1SS252
IC705 +5.6V REGULATOR
IC705 NJM78M06FAS
VIN VOUT
IC701 +5.6V REGULATOR
IC701 NJM7805FA
VOUT VIN
C709 10/25
C703 2200/16
D702 S5566
D703 S5566
Q707,708 +4.9V ON/OFF
+5V
+6.5V
2SC2603 Q707
XDA124ES Q708
R731 47
-6V
-6.6V
D718 1SS252
C731 47/10
R705 680 1/4W
R703 120
C705 10/25
R734 1.2k
1SS252 D719
-12V
R733 3.3k
+4.7V
Q703 XDC124ES
Q703 INVERTER
C732 330/10
R732 470
2SA933S Q710
Q709 XDC124ES
C706 10/25
R706 680 1/4W
R704 180
IC702 NJM7905FA
VOUT VIN
C704 2200/16
D704 S5566
D705 S5566
-6.5V
Q709,710 -5.7V ON/OFF
IC702 REGULATOR
D745 RD2.7ESB
C741 2.2/50
R748 2.2k
C744 1SS252
C742 4.7/50
R747 4.7k
DC PO
Q744 CD POWER ON/OFF CONTROL
Q744 S5566 XDC124ES
R745 10.0k
C723 47/50
C724 47/50
D715 RD30ESB
D716
2SB560 Q706
R714 22.0k 1/2W
R715 330
C720 22/100
D714 S5566
D712 S5566
C718 100/35
-27.1V
-31.6V
Q706 -29.4V REGULATOR
R713 22.0k 1/4W
C714 10/50
D717 RD7.5ESB
-19.6V
*
KUC SD,YPW
C718 100/35 10/50
KUC YPW,SD
IC703 UPC78M12AHF NJM7812FA

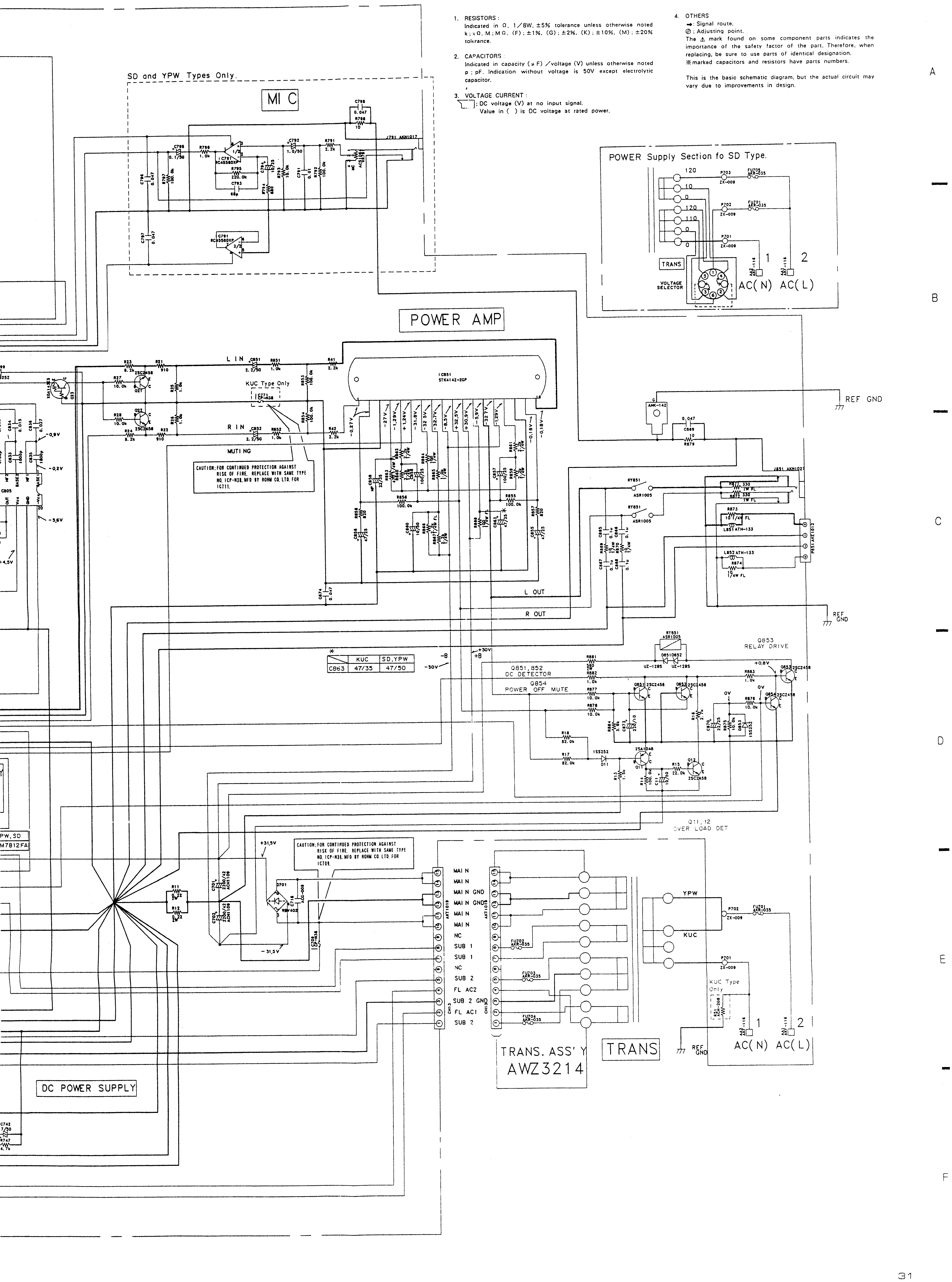
1. RESISTORS :
   Indicated in Ω, 1/8W, ±5% tolerance unless otherwise noted k ; kΩ, M ; MΩ, (F) ; ±1%, (G) ; ±2%, (K) ; ±10%, (M) ; ±20% tolerance.

2. CAPACITORS :
   Indicated in capacity (μF) /voltage (V) unless otherwise noted p ; pF. Indication without voltage is 50V except electrolytic capacitor.

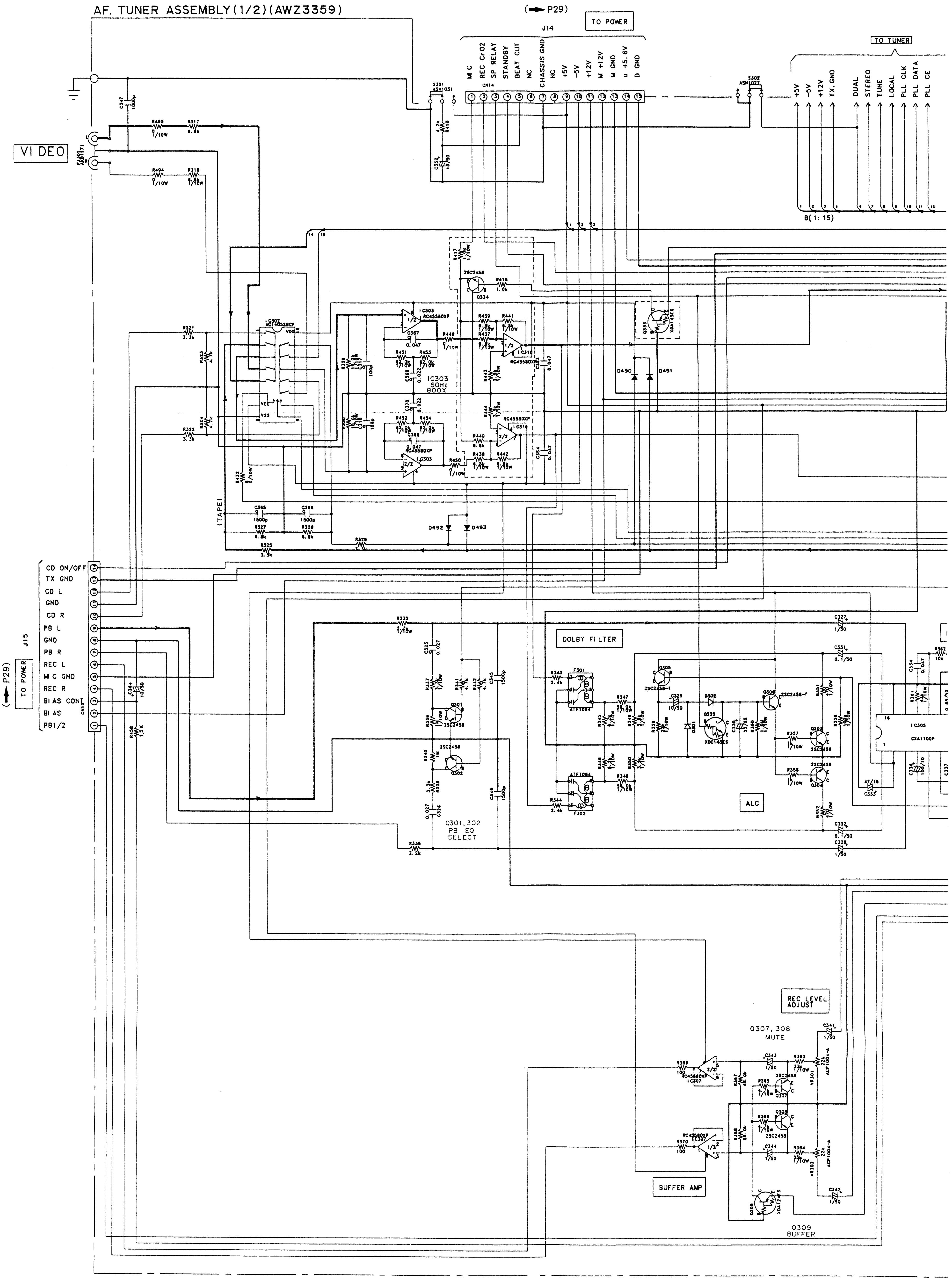
3. VOLTAGE CURRENT :
   ; DC voltage (V) at no input signal.
   Value in ( ) is DC voltage at rated power.

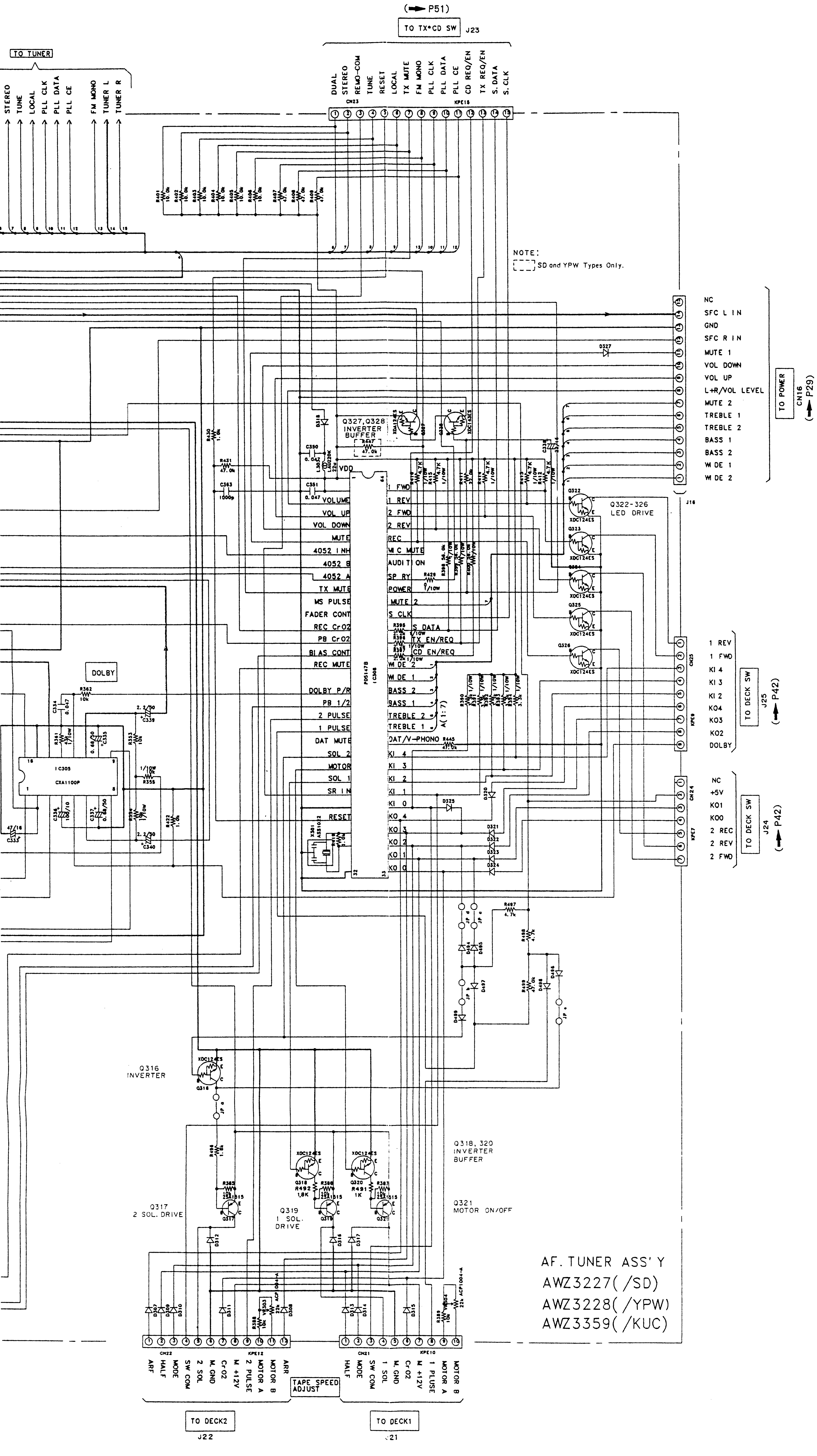
4. OTHERS
   ➡: Signal route.
   ⊘ : Adjusting point.
   The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
   ※marked capacitors and resistors have parts numbers.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.


5
6
7
8
9
A
B
C
D
E
F
SD and YPW Types Only.
MI C
C798 0.047
R788 10
J791 AKN1017
C795 0.1/50
R798 1.0k
IC791 RC4558DXP 1/2
C792 1.0/50
R791 2.2k
C796 0.047
R797 100.0k
R795 220.0k
C793 68p
C794 10/25
R793 10.0k
R794 680
C791 0.01
R792 100.0k
C797 0.047
IC791 RC4558DXP 2/2
POWER Supply Section fo SD Type.
120
10
0
120
110
0
0
P703 ZX-009
FU705 AKR-035
P702 ZX-009
FU701 AKR-035
P701 ZX-009
TRANS
VOLTAGE SELECTOR
1
2
AC(N)
AC(L)
POWER AMP
L IN
R IN
IC851 STK4142-2GP
KUC Type Only
IC771 ICP-N38
MUTI NG
CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE WITH SAME TYPE NO. ICP-N38, MFD BY ROHM CO. LTD. FOR IC711.
Q21 2SC2458
Q22 2SC2458
Q23
-0.27V
-27V
-1.29V
+1.24V
-31.8V
-32.5V
-32.7V
-8.5V
+32.3V
+30.9V
-5.9V
-32.7V
-1.29V
-0.18V
-0.18V
-0.9V
-0.2V
-3.6V
+4.5V
ANK-142
REF GND
C869 0.047
R879 10
J851 AKN1027
RY851 ASR1005
R871 330 1W FL
R872 330 1W FL
R873 10 1/4W FL
L851 ATH-133
L852 ATH-133
R874 10 1/4W FL
P851 AKE1012
L OUT
R OUT
REF GND
RY851 ASR1005
D851 D852 UZ-12BS
Q853 RELAY DRIVE
Q853 2SC2458
Q851,852 DC DETECTOR
Q854 POWER OFF MUTE
Q851 2SC2458
Q852 2SC2458
Q854 2SC2458
1SS252 D11
Q11 2SA1048
Q12 2SC2458
Q11,12 OVER LOAD DET
-B
-30V
+30V
+B
+0.8V
0V
0V
※
KUC | SD,YPW
C863 | 47/35 | 47/50
YPW,SD
M7812FA
DC POWER SUPPLY
+31.5V
-31.5V
CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE WITH SAME TYPE NO. ICP-N38, MFD BY ROHM CO. LTD. FOR IC709.
R11 0.22 2W
R12 0.22 2W
C701 4700/42 ACH1108
C702 4700/42 ACH1108
D701 RBV402
C718 ACG-009
IC709 ICP-N38
AKT1019
CN13
MAI N
MAI N
MAI N GND
MAI N GND
MAI N
MAI N
NC
SUB 1
SUB 1
NC
SUB 2
FL AC2
SUB 2 GND
FL AC1
SUB 2
AKT1019
CH13
FU702 AKR-035
FU703 AKR-035
FU704 AKR-035
TRANS. ASS' Y AWZ3214
TRANS
REF GND
YPW
KUC
P702 ZX-009
FU701 AKR-035
P701 ZX-009
KUC Type Only
R51 AKR-208
AKJ-116
1
2
AC(N)
AC(L)
C742 1/50
R747 4.7k

5.2 AF TUNER ASSEMBLY (1/2) (AWZ3359)


AF. TUNER ASSEMBLY (1/2) (AWZ3359)
(➡ P29)
J14
TO POWER
TO TUNER
MIC
REC CrO2
SP RELAY
STANDBY
BEAT CUT
NC
CHASSIS GND
NC
+5V
-5V
+12V
M +12V
M GND
u +5.6V
D GND
CN14
S301 ASH1031
S302 ASH1027
+5V
-5V
+12V
TX. GND
DUAL
STEREO
TUNE
LOCAL
PLL CLK
PLL DATA
PLL CE
B(1:15)
VIDEO
R495
R317 6.8k
R494
R318 6.8k
1/10W
C347 1000p
R410 4.7k
C352 10/50
IC302 MC14052BCP
VDD
VEE
VSS
IC303 RC4558DXP
IC310 RC4558DXP
IC303 60Hz 800X
2SC2458
Q334
R417
R418 1.0k
Q335
XDA143ES
D490
D491
D492
D493
R321 3.3k
R322 3.3k
R323 4.7k
R324 4.7k
C367 0.047
C368 0.047
C369 0.022
C370 0.022
R431
R432
R437
R438
R439
R440 6.8k
R441
R442
R443
R444
R448
R449
R450
R451
R452
R453
R454
C353 0.047
C354 0.047
100p
(TAPE)
C365 1500p
C366 1500p
R327 6.8k
R328 6.8k
R325 3.3k
R326 3.3k
CD ON/OFF
TX GND
CD L
GND
CD R
PB L
GND
PB R
REC L
MIC GND
REC R
BIAS CONT
BIAS
PB1/2
J15
CN15
(➡ P29)
TO POWER
C364 10/50
R358 1.5K
R335
C335 0.027
R337
R341 4.7k
R342 4.7k
C345 1500p
R336
Q301
2SC2458
R340 1M
R339 3.3k
Q302
C336 0.027
C346 1500p
Q301, 302
PB EQ
SELECT
R338 2.2k
DOLBY FILTER
R343 2.4k
F301
ATF1084
R344 2.4k
F302
R345
R346
R347 36.0k
R348 36.0k
R349
R350
R359
Q305
2SC2458-T
C329 10/50
D302
D301
Q336
XDC143ES
C330 33/25
Q306
2SC2458-T
R351
R354
R357
Q303
2SC2458
R358
Q304
R352
ALC
C327 1/50
C331 0.1/50
C332 0.1/50
C328 1/50
C334 0.047
R362 10k
R361
IC305
CXA1100P
C335 47/16
C336 100/10
C337
REC LEVEL ADJUST
Q307, 308
MUTE
C341 1/50
R369 100
IC307 RC4558DXP
C343 1/50
R363 33k
R365
R367 68.0k
Q307
2SC2458
VR301 22k ACP1004-A
R366
Q308
R368 68.0k
R370 100
C344 1/50
R364 33k
VR302 22k ACP1004-A
C342 1/50
BUFFER AMP
Q309
XDA143ES
Q309
BUFFER


(➡ P51)
TO TX•CD SW J23
TO TUNER
STEREO
TUNE
LOCAL
PLL CLK
PLL DATA
PLL CE
FM MONO
TUNER L
TUNER R
DUAL
STEREO
REMO-COM
TUNE
RESET
LOCAL
TX MUTE
FM MONO
PLL CLK
PLL DATA
PLL CE
CD REQ/EN
TX REQ/EN
S.DATA
S.CLK
CN23
KPE15
NOTE:
SD and YPW Types Only.
NC
SFC L IN
GND
SFC R IN
MUTE 1
VOL DOWN
VOL UP
L+R/VOL LEVEL
MUTE 2
TREBLE 1
TREBLE 2
BASS 1
BASS 2
WIDE 1
WIDE 2
TO POWER
CN16
(➡ P29)
J16
D327
Q327,Q328
INVERTER
BUFFER
Q322-326
LED DRIVE
XDC124ES
VDD
VOLUME
VOL UP
VOL DOWN
MUTE
4052 INH
4052 B
4052 A
TX MUTE
MS PULSE
FADER CONT
REC CrO2
PB CrO2
BIAS CONT
REC MUTE
DOLBY P/R
PB 1/2
2 PULSE
1 PULSE
DAT MUTE
SOL 2
MOTOR
SOL 1
SR IN
RESET
1 FWD
1 REV
2 FWD
2 REV
REC
MIC MUTE
AUDITION
SP RY
POWER
MUTE 2
S CLK
S DATA
TX EN/REQ
CD EN/REQ
WIDE 2
WIDE 1
BASS 2
BASS 1
TREBLE 2
TREBLE 1
DAT/V-PHONO
KI 4
KI 3
KI 2
KI 1
KI 0
KO 4
KO 3
KO 2
KO 1
KO 0
PD5147B
IC308
A(1:7)
DOLBY
IC305
CXA1100P
1 REV
1 FWD
KI 4
KI 3
KI 2
KO4
KO3
KO2
DOLBY
CN25
KPE9
TO DECK SW
J25
(➡ P42)
NC
+5V
KO1
KO0
2 REC
2 REV
2 FWD
CN24
KPE7
TO DECK SW
J24
(➡ P42)
Q316
INVERTER
Q317
2 SOL. DRIVE
Q319
1 SOL.
DRIVE
Q318, 320
INVERTER
BUFFER
Q321
MOTOR ON/OFF
CN22
KPE12
ARF
HALF
MODE
SW COM
2 SOL
M.GND
CrO2
M +12V
2 PULSE
MOTOR A
MOTOR B
ARR
TAPE SPEED
ADJUST
CN21
KPE10
HALF
MODE
SW COM
1 SOL
M.GND
CrO2
M +12V
1 PLUSE
MOTOR A
MOTOR B
TO DECK2
J22
TO DECK1
J21

AF. TUNER ASS'Y
AWZ3227(/SD)
AWZ3228(/YPW)
AWZ3359(/KUC)

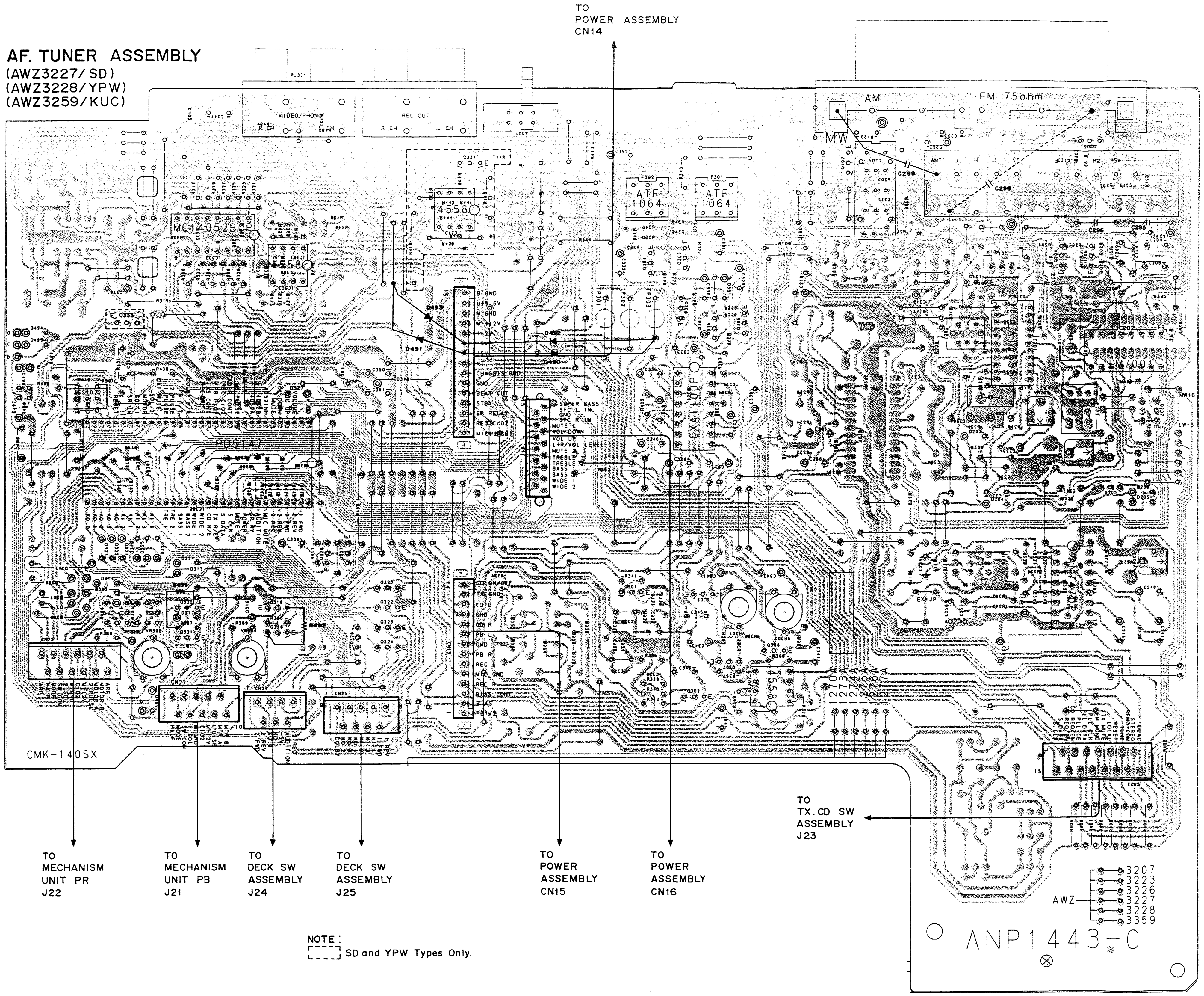
1. RESISTOR

INDICATED IN Ω, 1/8W, 5% TOLERANCE
UNLESS OTHERWISE NOTED K: kΩ, M: MΩ, 1/10W.

2. CAPACITOR

INDICATED IN CAPACITY(μF)/VOLTAGE(V)
UNLESS OTHERWISE NOTED p: pF
INDICATION WITHOUT VOLTAGE IS 50V
EXCEPT ELECTROLYTIC CAPACITOR.

AF. TUNER ASSEMBLY
(AWZ3227/SD)
(AWZ3228/YPW)
(AWZ3259/KUC)

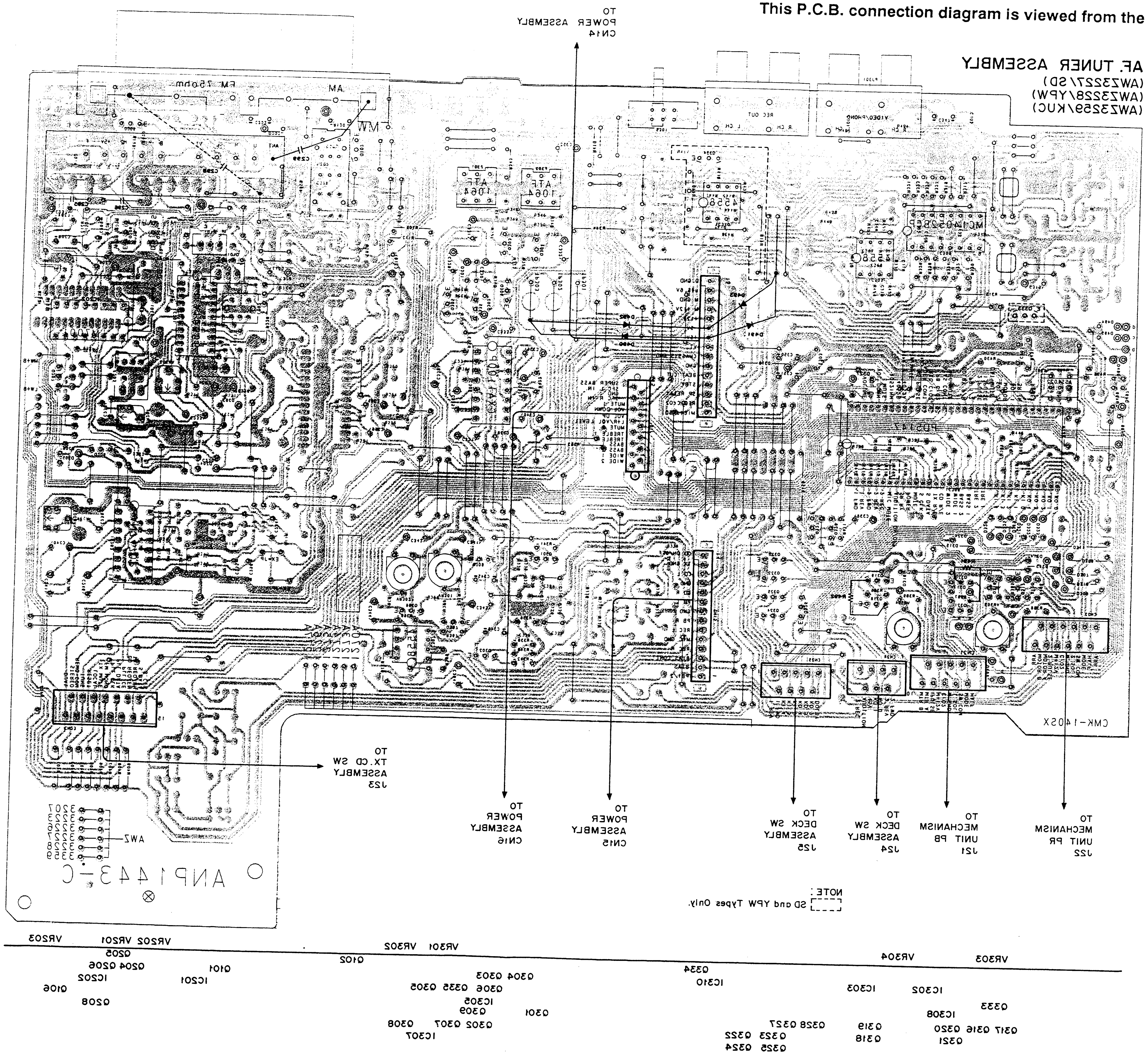

TO
POWER ASSEMBLY
CN14
VIDEO/PHONO
REC OUT
R CH
L CH
AM
FM 75ohm
MW
ATF 1064
ATF 1064
MC14052BCP
4558
4558
4558
PD5147
CXA1100P
SUPER BASS
MUTE
VOL UP
VOL DOWN
TREBLE
BASS
WIDE 1
WIDE 2
GND
BEAT CUT
ST BY
REC/CD2
PB
REC
CMK-140SX
TO
MECHANISM
UNIT PR
J22
TO
MECHANISM
UNIT PB
J21
TO
DECK SW
ASSEMBLY
J24
TO
DECK SW
ASSEMBLY
J25
TO
POWER
ASSEMBLY
CN15
TO
POWER
ASSEMBLY
CN16
TO
TX.CD SW
ASSEMBLY
J23
AWZ
3207
3223
3226
3227
3228
3359
ANP1443-C

NOTE:
SD and YPW Types Only.

VR303
VR304
VR301
VR302
VR202
VR201
VR203
Q334
IC310
Q102
Q205
IC302
IC303
Q304 Q303
Q101
Q204 Q206
Q333
Q306 Q335 Q305
IC201
IC202
IC308
IC305
Q106
Q317 Q316 Q320
Q319
Q328 Q327
Q301
Q309
Q208
Q321
Q318
Q323 Q322
Q302 Q307
Q308
Q325 Q324
IC307

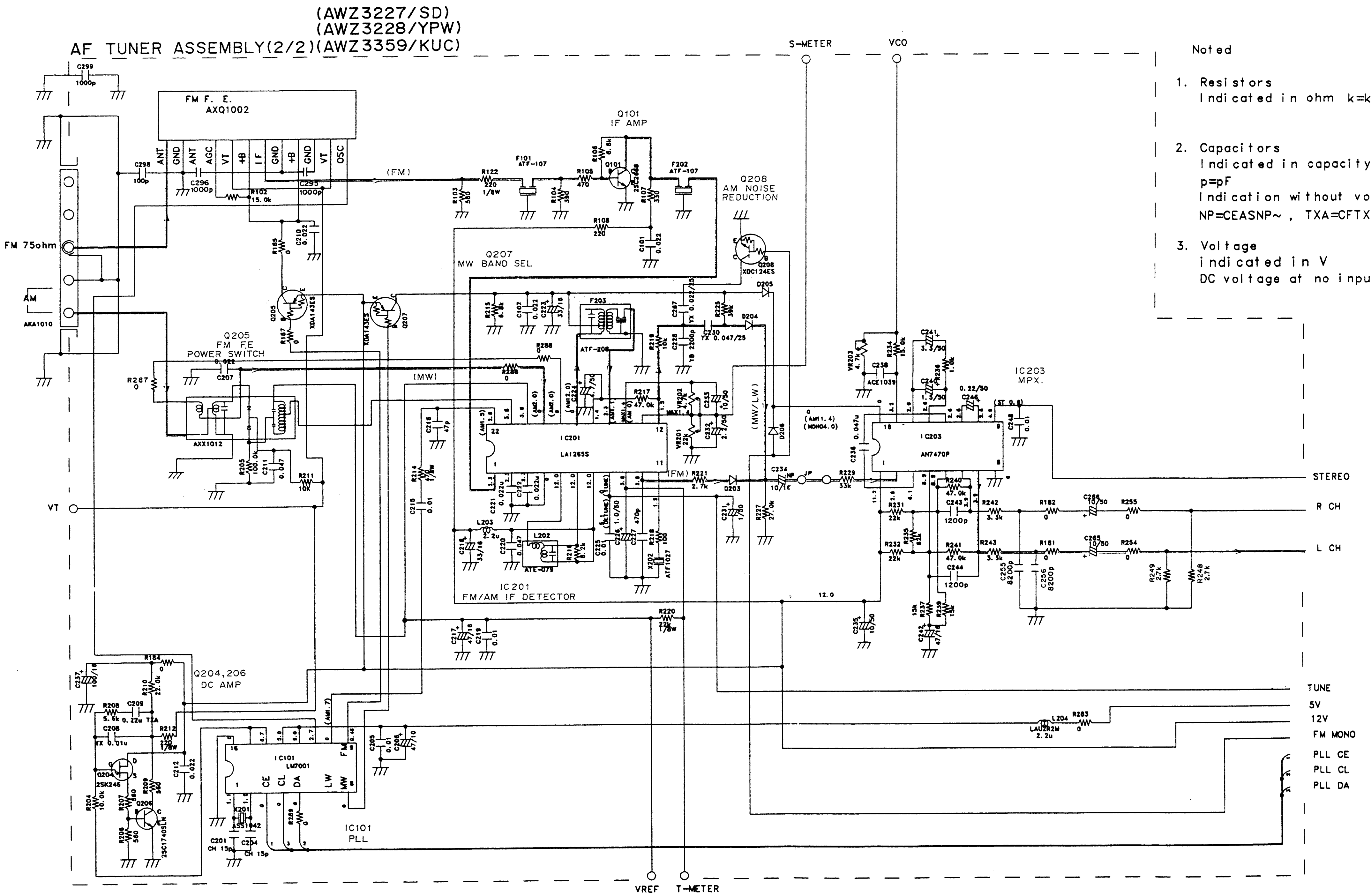
This P.C.B. connection diagram is viewed from the foil side.

AF TUNER ASSEMBLY
(AWZ3227/SD)
(AWZ3228/YPW)
(AWZ3259/KUC)



TO POWER ASSEMBLY CN14
FM 75ohm
AM
MW
ANT
REC OUT
L CH
R CH
VIDEO/PHONO
ATF 1064
ATF 1064
4558
MC14053BCP
4558
PD5147
CMK-1405X
TO TX.CD SW ASSEMBLY J23
TO POWER ASSEMBLY CN16
TO POWER ASSEMBLY CN15
TO DECK SW ASSEMBLY J25
TO DECK SW ASSEMBLY J24
TO MECHANISM UNIT PB J21
TO MECHANISM UNIT PR J22
AW2
ANP1443-C
NOTE: SD and YPW Types Only.
VR203
VR202 VR201
Q205
Q204 Q206
IC202
Q106
Q208
Q101
IC201
Q102
VR302
VR301
Q304 Q303
Q306 Q335 Q305
IC305
Q309
Q302 Q307
Q308
IC307
Q301
Q334
IC310
Q328 Q327
Q323 Q322
Q325 Q324
VR304
IC303
Q319
Q318
VR303
IC302
Q333
IC308
Q317 Q316 Q320
Q321

5.3 AF TUNER ASSEMBLY (2/2) (AWZ3359)


(AWZ3227/SD)
(AWZ3228/YPW)
AF TUNER ASSEMBLY(2/2)(AWZ3359/KUC)
S-METER
VCO
FM F. E.
AXQ1002
ANT
GND
ANT
AGC
VT
+B
IF
GND
+B
GND
VT
OSC
(FM)
Q101
IF AMP
F101
ATF-107
F202
ATF-107
Q208
AM NOISE
REDUCTION
Q207
MW BAND SEL
FM 75ohm
AM
AKA1010
Q205
FM F.E
POWER SWITCH
AXX1012
(MW)
F203
ATF-208
IC201
LA1265S
(MW/LW)
IC203
MPX.
IC203
AN7470P
(ST 0.6)
STEREO
R CH
L CH
VT
IC201
FM/AM IF DETECTOR
Q204,206
DC AMP
IC101
LM7001
CE
CL
DA
LW
MW
FM
IC101
PLL
TUNE
5V
12V
FM MONO
PLL CE
PLL CL
PLL DA
VREF
T-METER

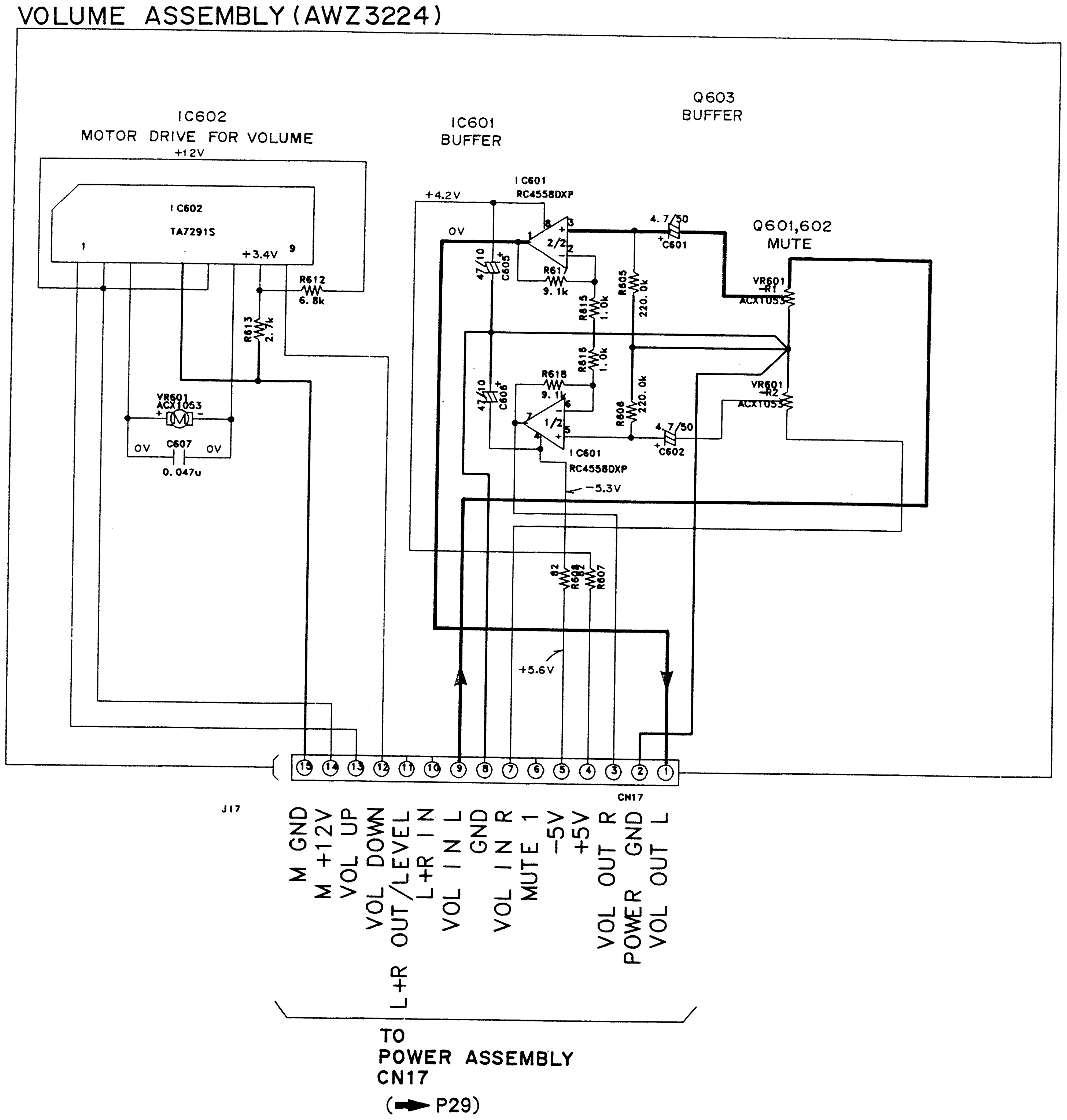
Noted

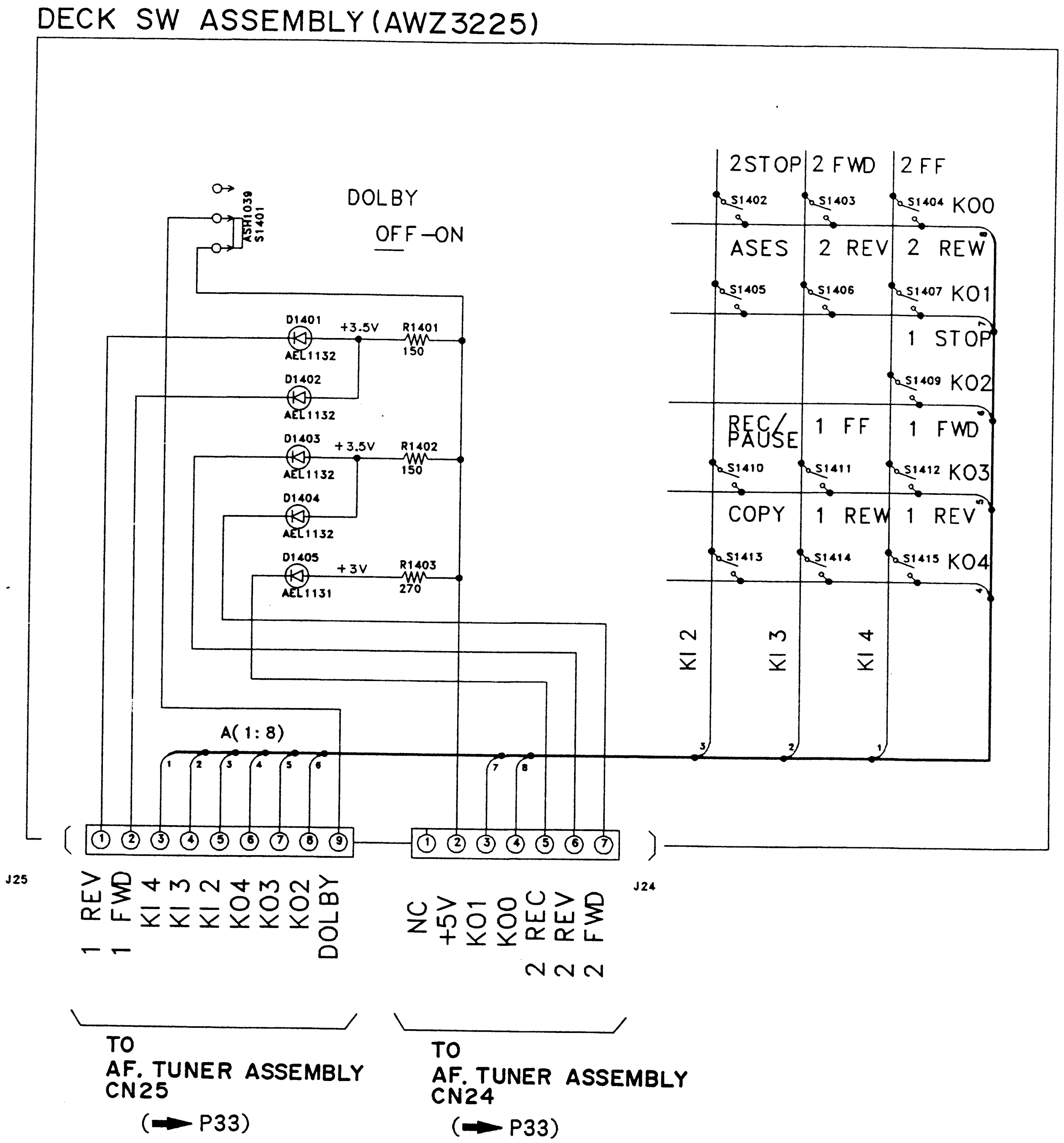
1. Resistors
   Indicated in ohm k=kohm M=Mohm

2. Capacitors
   Indicated in capacity(uF)/voltage(V)
   p=pF
   Indication without voltage is 50v except electrolytics capacitor.
   NP=CEASNP~ , TXA=CFTXA~

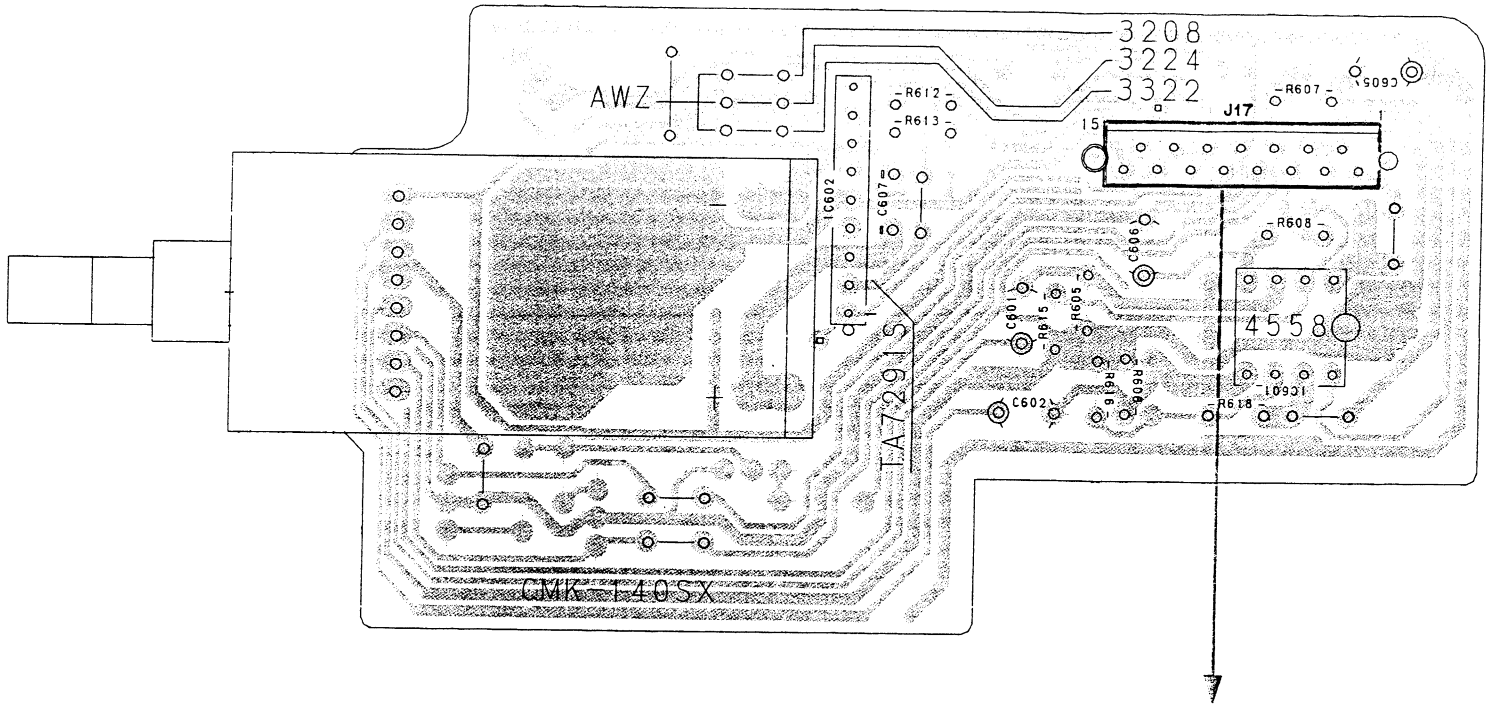
3. Voltage
   indicated in V
   DC voltage at no input signal of FM

5.4 VOLUME (AWZ3224), DECK SW (AWZ3225) ASSEMBLY


VOLUME ASSEMBLY (AWZ3224)
IC602
MOTOR DRIVE FOR VOLUME
+12V
IC602
TA7291S
+3.4V
R612
6.8k
R613
2.7k
VR601
ACX1053
C607
0.047u
0V
IC601
BUFFER
Q603
BUFFER
IC601
RC4558DXP
+4.2V
0V
C605
47/10
R617
9.1k
R615
1.0k
R605
220.0k
4.7/50
C601
Q601,602
MUTE
VR601
-R1
ACX1053
R616
1.0k
C606
47/10
R618
9.1k
R606
220.0k
4.7/50
C602
VR601
-R2
ACX1053
IC601
RC4558DXP
-5.3V
R608
R607
+5.6V
CN17
J17
M GND
M +12V
VOL UP
VOL DOWN
L+R OUT/LEVEL
L+R IN
VOL IN L
GND
VOL IN R
MUTE 1
-5V
+5V
VOL OUT R
POWER GND
VOL OUT L
TO
POWER ASSEMBLY
CN17
(→ P29)

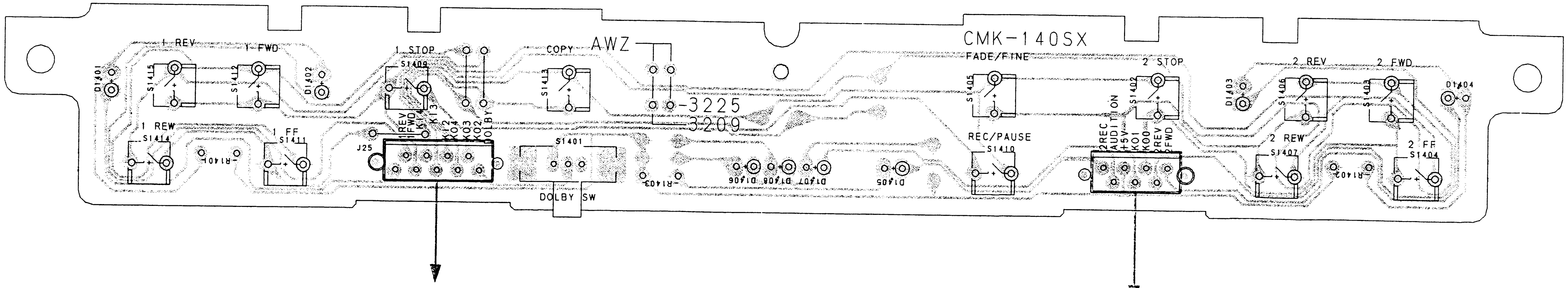

DECK SW ASSEMBLY (AWZ3225)
S1401
ASH1039
DOLBY
OFF-ON
D1401
AEL1132
+3.5V
R1401
150
D1402
AEL1132
D1403
AEL1132
+3.5V
R1402
150
D1404
AEL1132
D1405
AEL1131
+3V
R1403
270
2STOP
2 FWD
2 FF
S1402
S1403
S1404
KO0
ASES
2 REV
2 REW
S1405
S1406
S1407
KO1
1 STOP
S1409
KO2
REC/PAUSE
1 FF
1 FWD
S1410
S1411
S1412
KO3
COPY
1 REW
1 REV
S1413
S1414
S1415
KO4
KI 2
KI 3
KI 4
A(1:8)
J25
J24
1 REV
1 FWD
KI 4
KI 3
KI 2
KO4
KO3
KO2
DOLBY
NC
+5V
KO1
KO0
2 REC
2 REV
2 FWD
TO
AF. TUNER ASSEMBLY
CN25
(→ P33)
TO
AF. TUNER ASSEMBLY
CN24
(→ P33)

VOLUME ASSEMBLY (AWZ3224)


3208
3224
3322
AWZ
R612
R613
J17
15
R607
C605
IC602
C607
C606
R608
4558
C601
R615
R605
R616
R606
R618
IC601
C602
TA7291S
CMK-140SX

TO
POWER ASSEMBLY
CN17

DECK SW ASSEMBLY (AWZ3225)

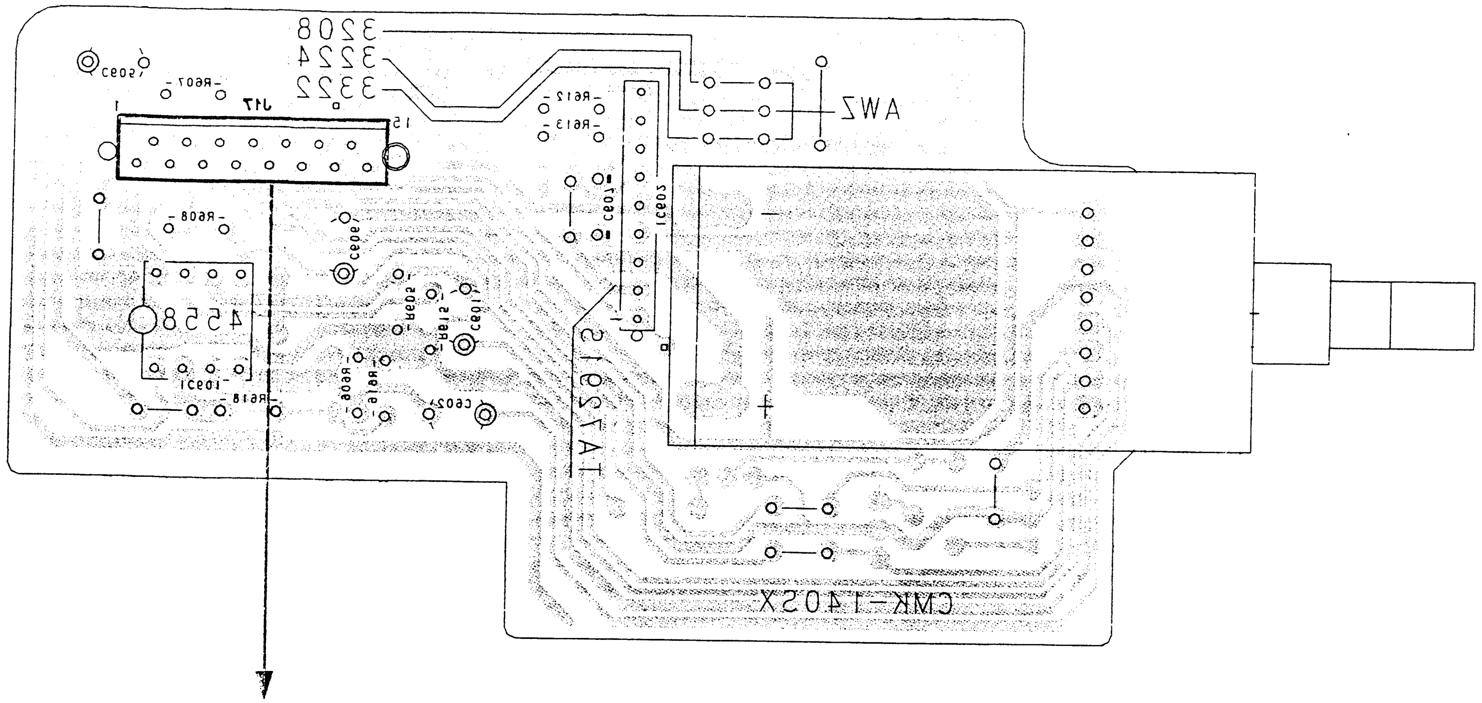

1 REV
1 FWD
D1401
S1415
S1412
D1402
1 STOP
S1409
COPY
S1413
AWZ
3225
3209
1 REW
S1414
1 FF
S1411
R1401
J25
REV
FWD
K04
K03
K02
DOLBY
S1401
DOLBY SW
R1403
D1406
D1408
D1407
D1405
CMK-140SX
FADE/FINE
S1405
REC/PAUSE
S1410
2REC
AUDITION
+5V
K01
K00
2REV
2FWD
S1402
2 STOP
D1403
2 REV
S1406
2 FWD
S1403
D1404
2 REW
S1407
R1402
2 FF
S1404

TO
AF.TUNER ASSENBLY
CN25

TO
AF.TUNER ASSEMBLY
CN27

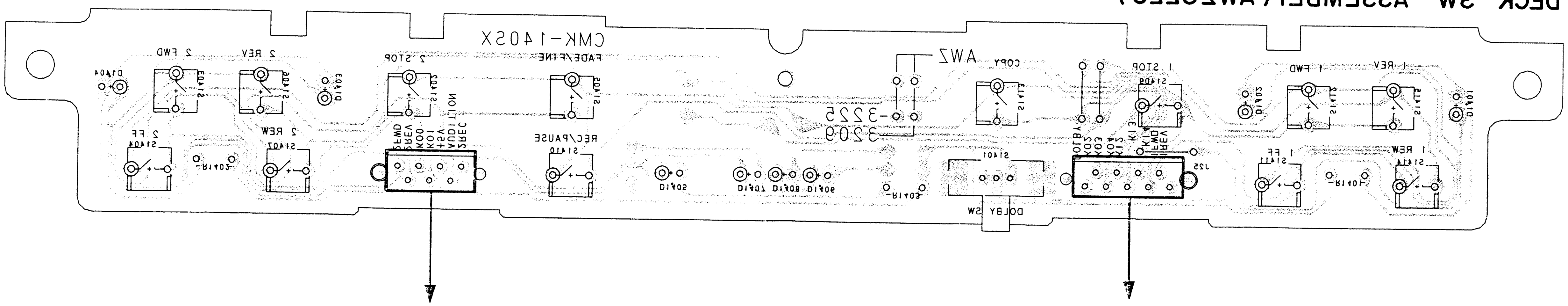
This P.C.B. connection diagram is viewed from the foil side.

VOLUME ASSEMBLY (AWZ3224)


3208
3224
3322
AWZ
J17
4558
IC601
C603
R607
R608
R613
CMK-140SX
S1627A1

TO
POWER ASSEMBLY
CN17

DECK SW ASSEMBLY (AWZ3225)


CMK-140SX
AWZ
2 FWD
2 REV
2 STOP
FADE/FINE
COPY
1 STOP
1 FWD
1 REV
2 FF
2 REW
REC/PAUSE
1 FF
1 REW
3225
3209
DOLBY SW
J25

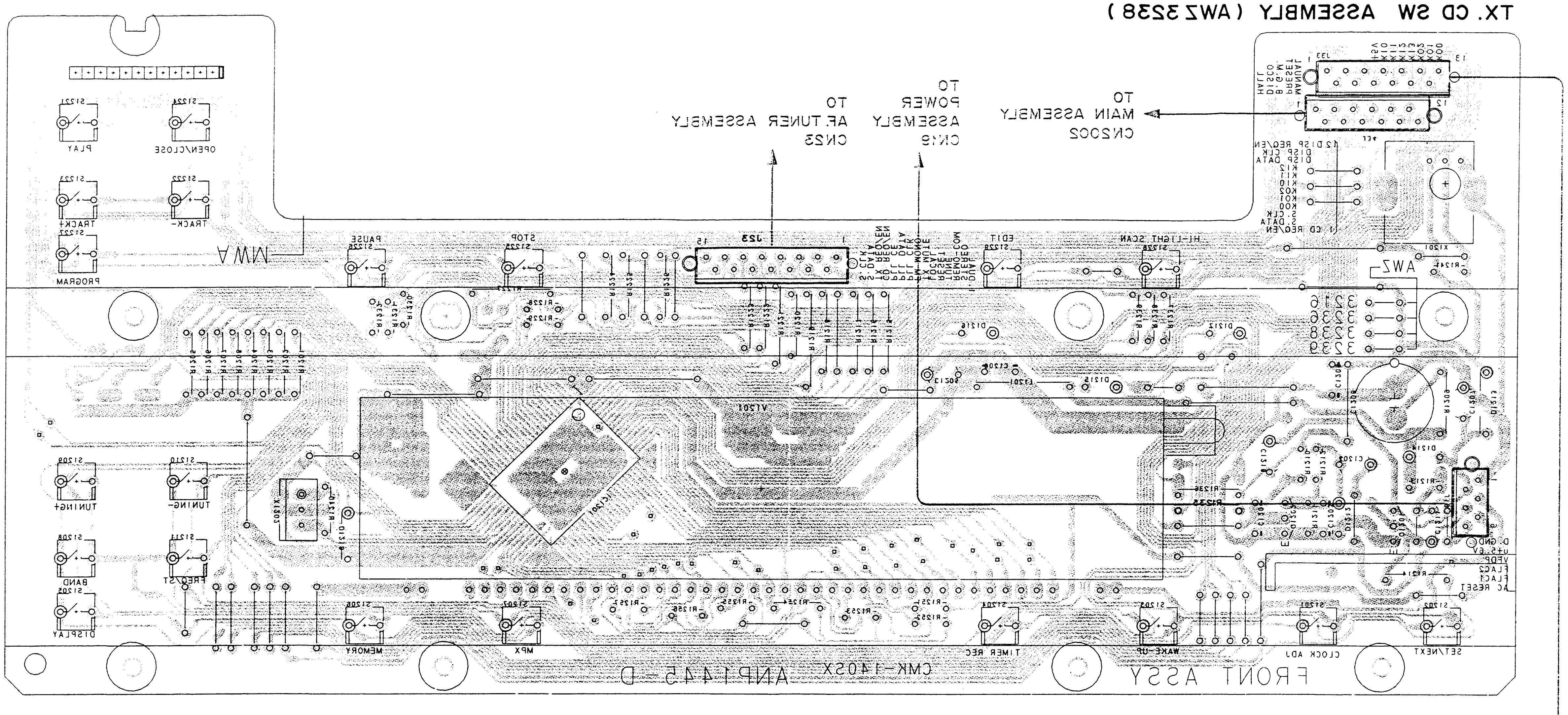
TO
AF.TUNER ASSEMBLY
CN27

TO
AF.TUNER ASSENBLY
CN25

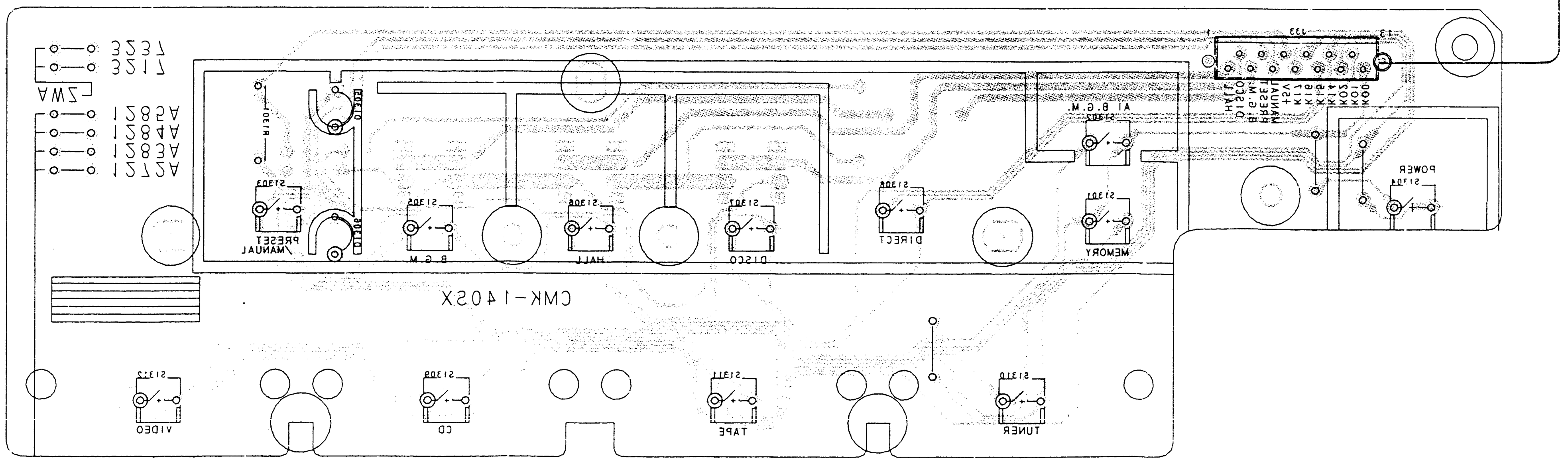
This P.C.B. connection diagram is viewed from the foil side.

5.5 TX.CD SW (AWZ3238), AMP SW (AWZ3237) ASSEMBLY

TX. CD SW ASSEMBLY (AWZ 3238)

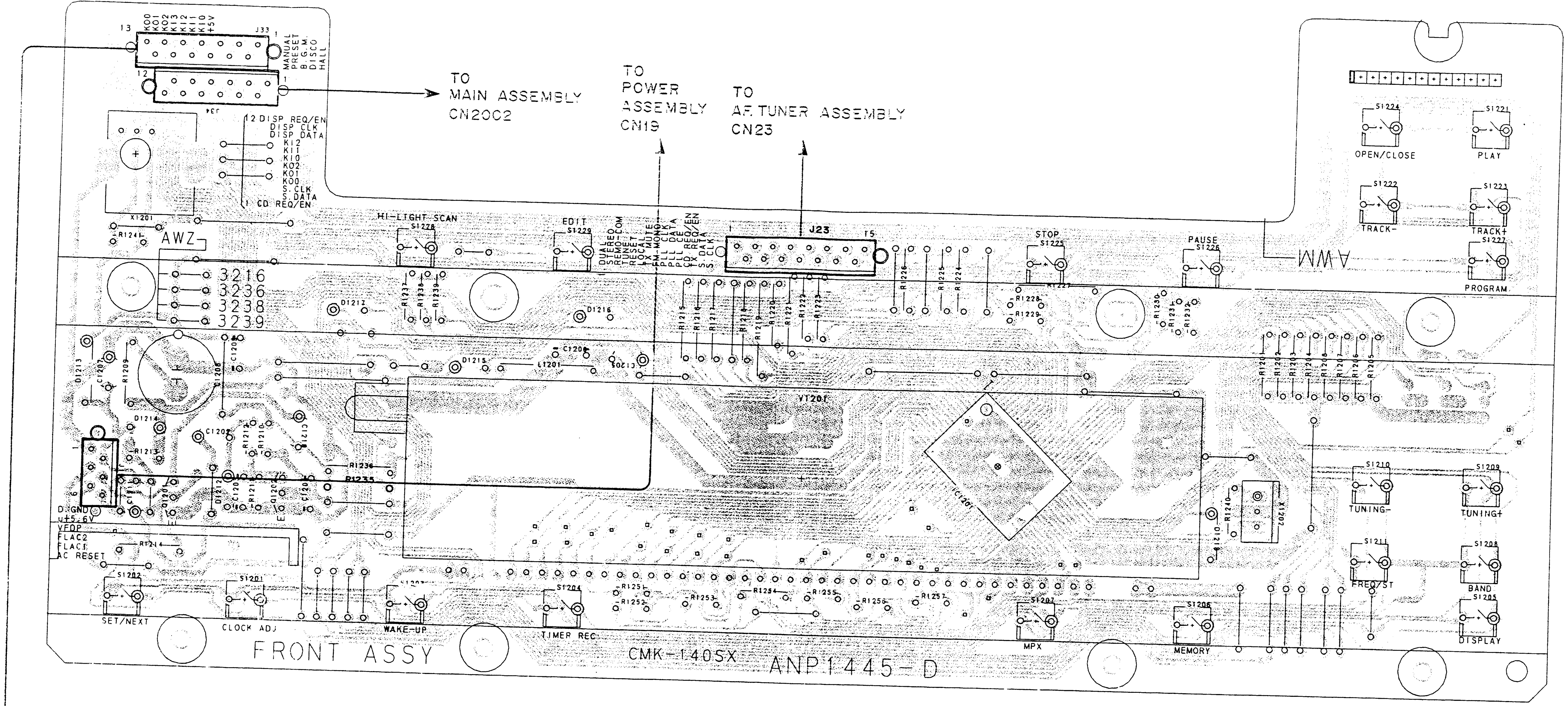

TO MAIN ASSEMBLY CN2202
TO POWER ASSEMBLY CN19
TO AF TUNER ASSEMBLY CN23
J23
J33
AWA
AWZ
PLAY
OPEN/CLOSE
TRACK+
TRACK-
PROGRAM
PAUSE
STOP
EDIT
HI-LIGHT SCAN
TUNING+
TUNING-
BAND
FREQ/ST
DISPLAY
MEMORY
MPX
TIMER REC
WAKE-UP
CLOCK ADJ
SET/NEXT
V1201
IC1201
X1201
X1202
D.GND
+5.6V
VFDP
FLAC2
FLAC1
AC RESET
CMK-1405X
ANP1445-D
FRONT ASSY

AMP SW ASSEMBLY (AWZ3237)

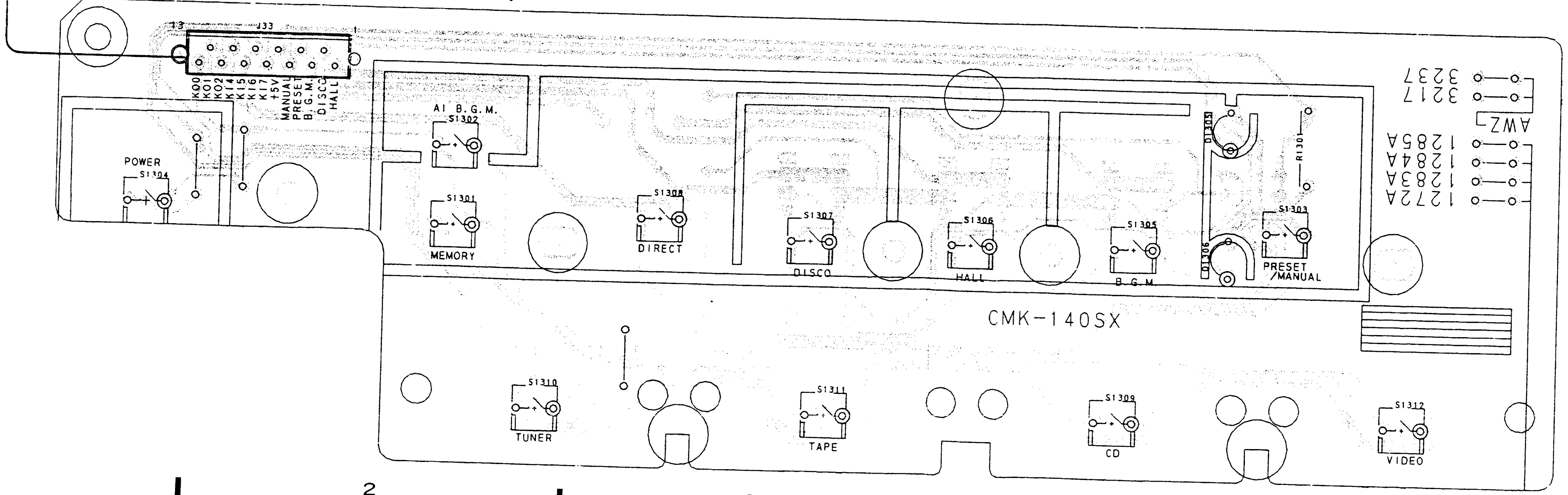

J33
AWZ
PRESET/MANUAL
B.G.M
HALL
DISCO
DIRECT
MEMORY
AI B.G.M.
POWER
VIDEO
CD
TAPE
TUNER
CMK-1405X

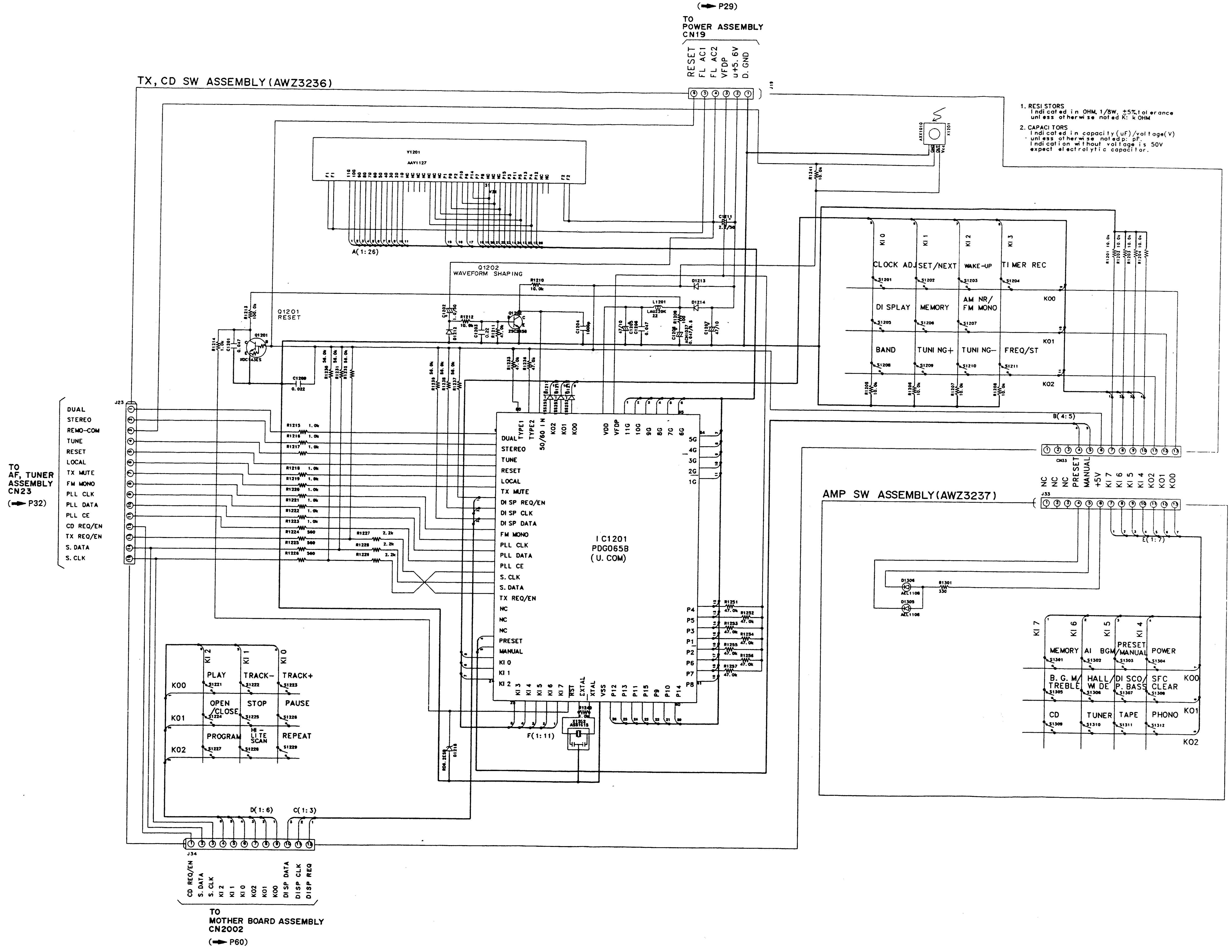
5.5 TX.CD SW (AWZ3238), AMP SW (AWZ3237) ASSEMBLY

TX. CD SW ASSEMBLY (AWZ 3238)


TO
MAIN ASSEMBLY
CN2002
TO
POWER
ASSEMBLY
CN19
TO
AF. TUNER ASSEMBLY
CN23
J33
J34
J23
AWZ
3216
3236
3238
3239
12 DISP REQ/EN
DISP CLK
DISP DATA
K12
K11
K10
K02
K01
K00
S.CLK
S.DATA
1 CD REQ/EN
X1201
HI-LIGHT SCAN
EDIT
STOP
PAUSE
OPEN/CLOSE
PLAY
TRACK-
TRACK+
PROGRAM
AWM
TUNING-
TUNING+
FREQ/ST
BAND
DISPLAY
MEMORY
MPX
TIMER REC
WAKE-UP
CLOCK ADJ
SET/NEXT
D.GND
+5.6V
VFDP
FLAC2
FLAC1
AC RESET
V1201
IC1201
X1202
FRONT ASSY
CMK-140SX
ANP1445-D

AMP SW ASSEMBLY (AWZ3237)

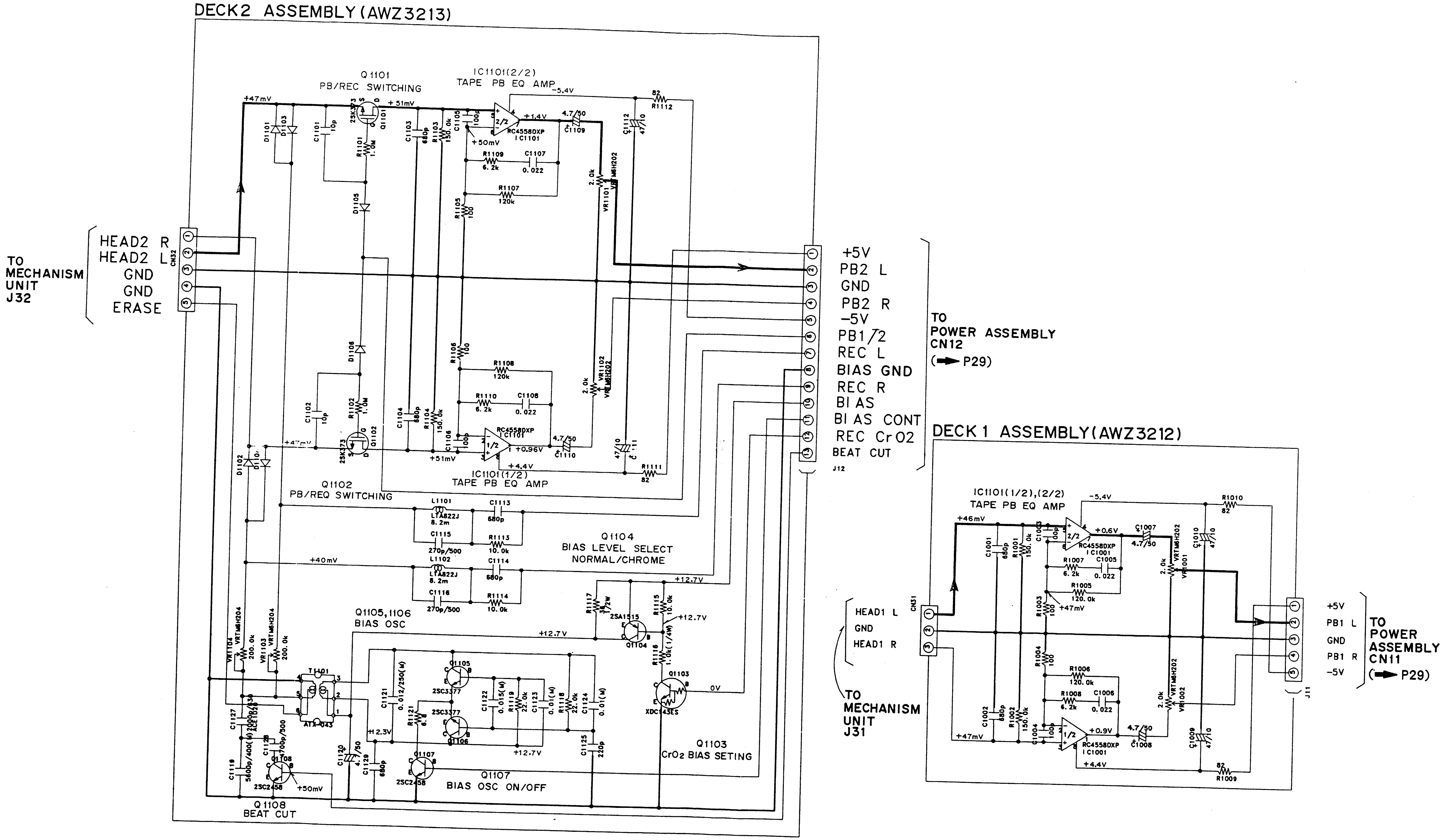

J33
K00
K01
K02
K14
K15
K16
K17
+5V
MANUAL
PRESET
B.G.M.
DISCO
HALL
POWER
AI B.G.M.
MEMORY
DIRECT
DISCO
HALL
B.G.M.
PRESET /MANUAL
3237
3217
AWZ
1285A
1284A
1283A
1272A
CMK-140SX
TUNER
TAPE
CD
VIDEO


(➡ P29)
TO
POWER ASSEMBLY
CN19
RESET
FL AC1
FL AC2
VFDP
U+5.6V
D.GND
TX, CD SW ASSEMBLY (AWZ3236)
V1201
AAV1127
A(1:26)
Q1202
WAVEFORM SHAPING
Q1201
RESET
R1210
10.0k
L1201
D1213
D1214
C1211
C1209
0.022
J23
DUAL
STEREO
REMO-COM
TUNE
RESET
LOCAL
TX MUTE
FM MONO
PLL CLK
PLL DATA
PLL CE
CD REQ/EN
TX REQ/EN
S.DATA
S.CLK
TO
AF, TUNER
ASSEMBLY
CN23
(➡ P32)
R1215 1.0k
R1216 1.0k
R1217 1.0k
R1218 1.0k
R1219 1.0k
R1220 1.0k
R1221 1.0k
R1222 1.0k
R1223 1.0k
R1224 560
R1225 560
R1226 560
R1227 2.2k
R1228 2.2k
R1229 2.2k
IC1201
PDG0658
(U.COM)
TYPE1
TYPE2
50/60 IN
KO2
KO1
KO0
VDD
VFDP
11G
10G
9G
8G
7G
6G
5G
4G
3G
2G
1G
DUAL
STEREO
TUNE
RESET
LOCAL
TX MUTE
DISP REQ/EN
DISP CLK
DISP DATA
FM MONO
PLL CLK
PLL DATA
PLL CE
S.CLK
S.DATA
TX REQ/EN
NC
NC
NC
PRESET
MANUAL
KI 0
KI 1
KI 2
KI 3
KI 4
KI 5
KI 6
KI 7
RST
EXTAL
XTAL
VSS
P12
P13
P11
P15
P9
P10
P14
P4
P5
P3
P1
P2
P6
P7
P8
R1251 47.0k
R1252 47.0k
R1253 47.0k
R1254 47.0k
R1255 47.0k
R1256 47.0k
R1257 47.0k
F(1:11)
X1201
KI 2
KI 1
KI 0
KO0
KO1
KO2
PLAY
TRACK−
TRACK+
OPEN/CLOSE
STOP
PAUSE
PROGRAM
HI-LITE SCAN
REPEAT
S1221
S1222
S1223
S1224
S1225
S1226
S1227
S1228
S1229
D(1:6)
C(1:3)
J34
CD REQ/EN
S.DATA
S.CLK
KI 2
KI 1
KI 0
KO2
KO1
KO0
DISP DATA
DISP CLK
DISP REQ
TO
MOTHER BOARD ASSEMBLY
CN2002
(➡ P60)
X1201
R1241
10.0k
KI 0
KI 1
KI 2
KI 3
CLOCK ADJ
SET/NEXT
WAKE-UP
TIMER REC
S1201
S1202
S1203
S1204
DISPLAY
MEMORY
AM NR/FM MONO
KO0
S1205
S1206
S1207
BAND
TUNING+
TUNING−
FREQ/ST
KO1
S1208
S1209
S1210
S1211
KO2
B(4:5)
CN33
NC
NC
NC
PRESET MANUAL
+5V
KI 7
KI 6
KI 5
KI 4
KO2
KO1
KO0
AMP SW ASSEMBLY (AWZ3237)
J33
E(1:7)
D1306
AEL1106
D1305
AEL1106
R1301
330
KI 7
KI 6
KI 5
KI 4
MEMORY
AI BGM
PRESET/MANUAL
POWER
S1301
S1302
S1303
S1304
B.G.M/TREBLE
HALL/WIDE
DISCO/P.BASS
SFC CLEAR
KO0
S1305
S1306
S1307
S1308
CD
TUNER
TAPE
PHONO
KO1
S1309
S1310
S1311
S1312
KO2
1
2
3
4
5
6
A
B
C
D

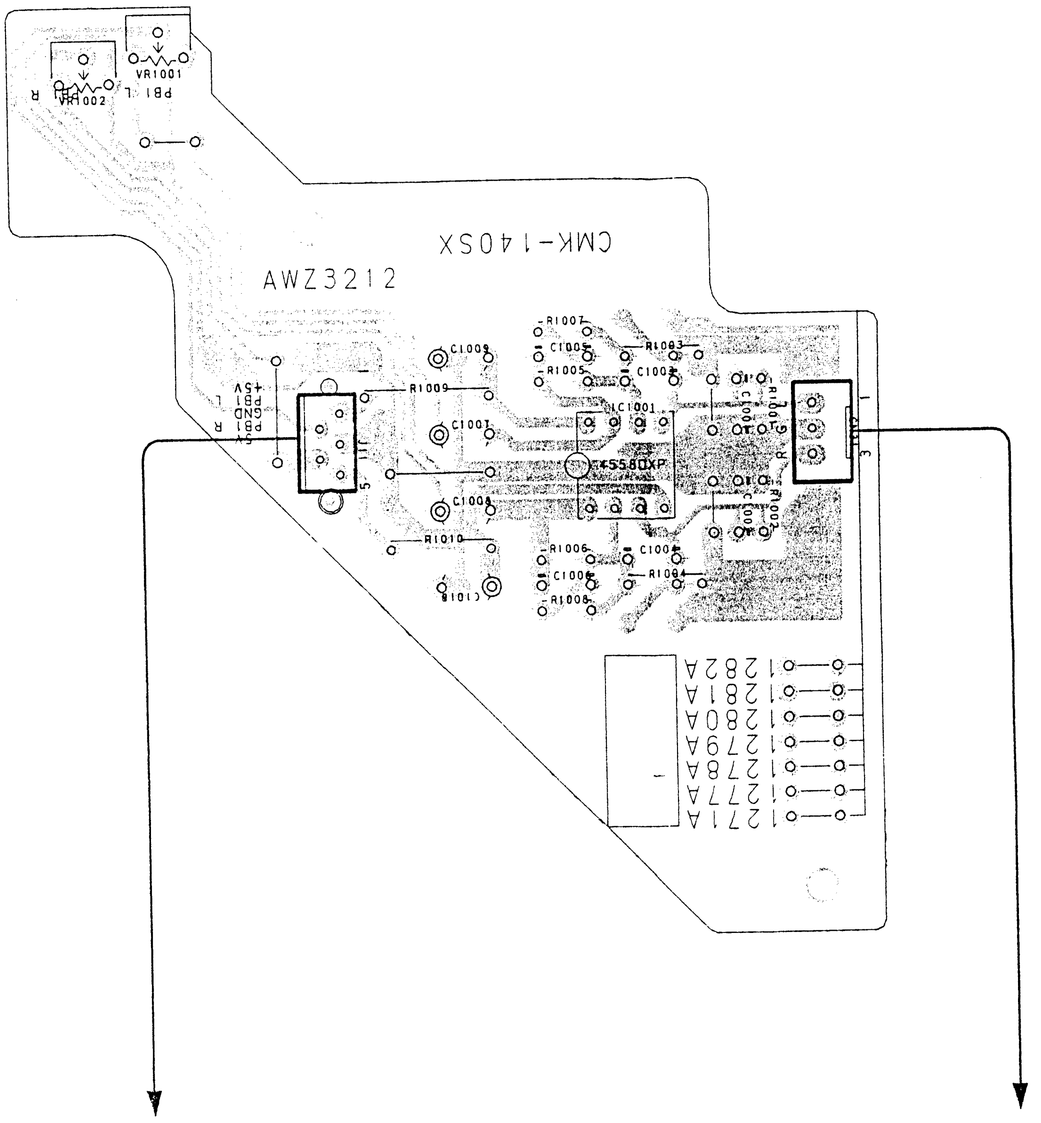
1. RESISTORS
Indicated in OHM, 1/8W, ±5% tolerance
unless otherwise noted K: k OHM

2. CAPACITORS
Indicated in capacity(uF)/voltage(V)
unless otherwise notedp: pF.
Indication without voltage is 50V
expect electrolytic capacitor.

5.6 DECK–1 (AWZ3212), DECK–2 (AWZ3213) ASSEMBLY


DECK2 ASSEMBLY (AWZ3213)
Q1101
PB/REC SWITCHING
IC1101(2/2)
TAPE PB EQ AMP
+47mV
+51mV
-5.4V
+1.4V
+50mV
RC4558DXP
IC1101
D1101
D1103
C1101 10p
2SK373
R1101 1.0M
D1105
C1103 680p
R1103 150.0k
C1105 100p
R1109 6.2k
C1107 0.022
R1107 120k
R1105 100
C1109 4.7/50
VR1101 VRTM6H202 2.0k
C1112 47/10
R1112 82
TO MECHANISM UNIT J32
HEAD2 R
HEAD2 L
GND
GND
ERASE
CN32
+5V
PB2 L
GND
PB2 R
-5V
PB1/2
REC L
BIAS GND
REC R
BIAS
BIAS CONT
REC CrO2
BEAT CUT
J12
TO POWER ASSEMBLY CN12
(➡ P29)
D1106
R1106 100
R1108 120k
R1110 6.2k
C1108 0.022
C1102 10p
R1102 1.0M
C1104 680p
R1104 150.0k
C1106 100p
+0.96V
C1110 4.7/50
VR1102 VRTM6H202 2.0k
C1111 47/10
R1111 82
+4.4V
IC1101(1/2)
TAPE PB EQ AMP
D1102
D1104
Q1102
PB/REC SWITCHING
L1101 LTA822J 8.2m
C1113 680p
C1115 270p/500
R1113 10.0k
L1102 LTA822J 8.2m
C1114 680p
C1116 270p/500
R1114 10.0k
+40mV
Q1104
BIAS LEVEL SELECT
NORMAL/CHROME
+12.7V
R1117 1/2W
2SA1515
R1115 10.0k
R1116 1.0k(1/4W)
Q1105,1106
BIAS OSC
VR1104 VRTM6H204 200.0k
VR1103 VRTM6H204 200.0k
T1101
ATF-043
2SC3377
C1121 0.012/250(M)
C1122 0.015(M)
R1119 22.0k
C1123 0.01(M)
R1118 22.0k
C1124 0.01(M)
R1121 6.8
+12.3V
C1125 220p
Q1103
XDC143ES
0V
Q1103
CrO2 BIAS SETING
C1127
C1128
C1119 5600p/400
Q1108
2SC2458
+50mV
C1120 4.7/50
C1129 680p
Q1107
2SC2458
BIAS OSC ON/OFF
Q1108
BEAT CUT
DECK 1 ASSEMBLY (AWZ3212)
IC1101(1/2),(2/2)
TAPE PB EQ AMP
+46mV
-5.4V
+0.6V
C1001 680p
R1001 150.0k
C1003 100p
RC4558DXP
IC1001
C1007 4.7/50
R1007 6.2k
C1005 0.022
R1005 120.0k
R1003 100
+47mV
VR1001 VRTM6H202 2.0k
C1010 47/10
R1010 82
CN31
HEAD1 L
GND
HEAD1 R
TO MECHANISM UNIT J31
+5V
PB1 L
GND
PB1 R
-5V
J11
TO POWER ASSEMBLY CN11
(➡ P29)
R1004 100
R1006 120.0k
R1008 6.2k
C1006 0.022
C1002 680p
R1002 150.0k
C1004 100p
+0.9V
C1008 4.7/50
VR1002 VRTM6H202 2.0k
C1009 47/10
+4.4V
R1009 82

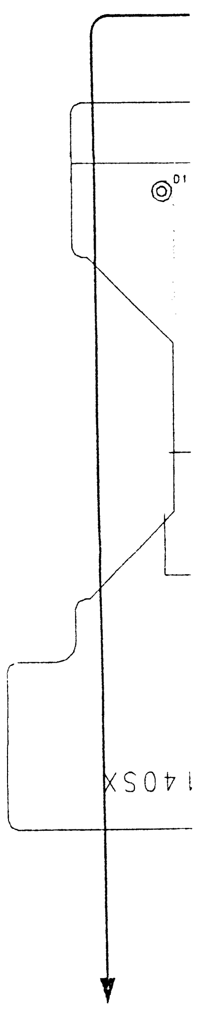
DECK-1 ASSEMBLY (AWZ3212)


VR1001
VR1002
PB1 L
PB1 R
CMK-140SX
AWZ3212
+5V
PB1 L
GND
PB1 R
IC1001
4558DXP
C1001
C1002
C1003
C1004
C1005
C1006
C1007
C1008
C1009
C1010
R1001
R1002
R1003
R1004
R1005
R1006
R1007
R1008
R1009
R1010
1271A
1277A
1278A
1279A
1280A
1281A
1282A

TO
POWER ASSEMBLY
CN11

TO
MECHANISM
UNIT PB
J31

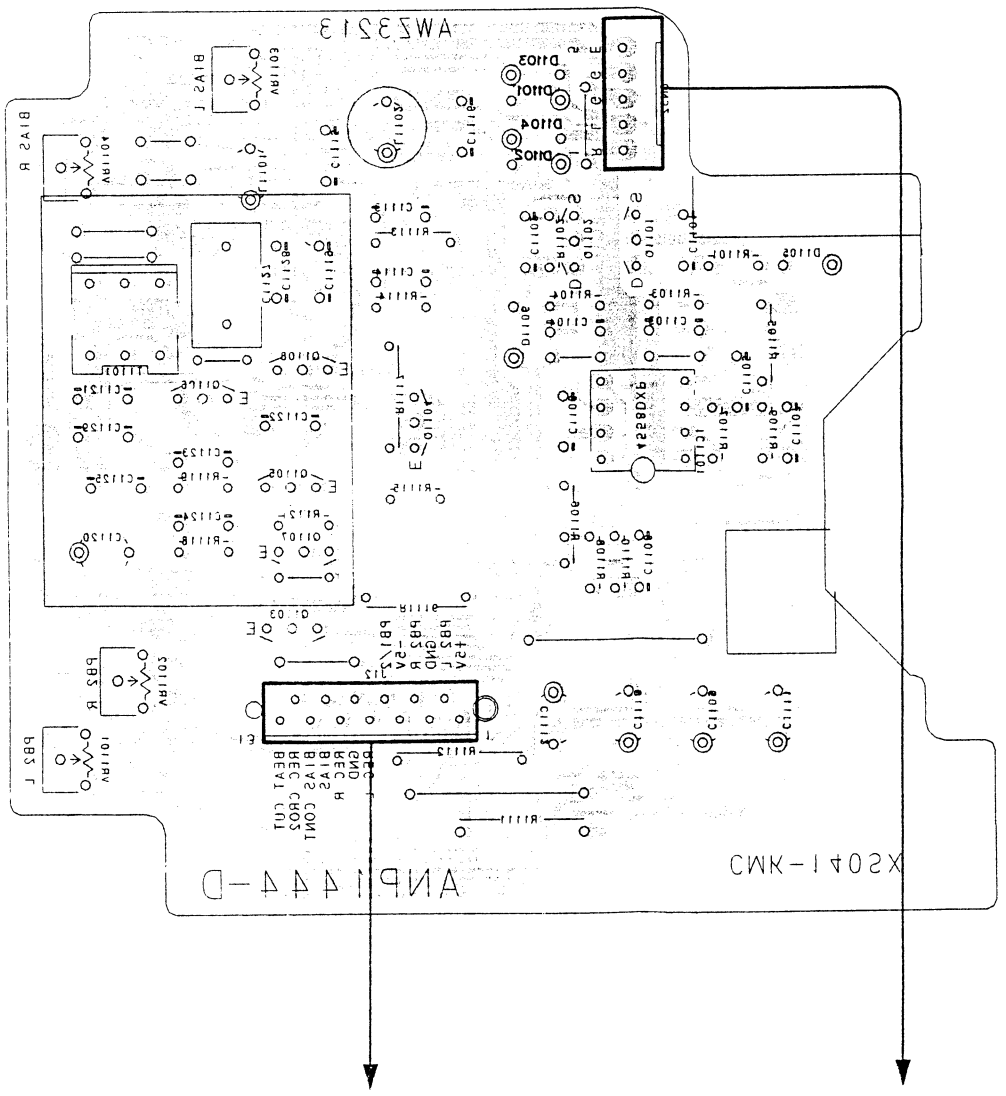
DECK -

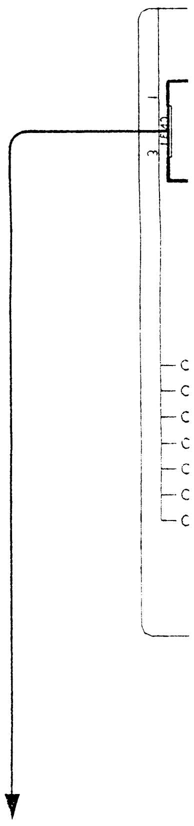


TO
MECHANISM
UNIT PR
J32

This P.C.B. connection diagram is viewed from the foil side.

DECK-2 ASSEMBLY (AWZ3213)


AWZ3213
BIAS L
BIAS R
PB2 L
PB2 R
VR1101
VR1102
VR1103
VR1104
4558DXP
ANP1444-D
CMK-140SX
+5V
GND
PB2 L
PB2 R
BEAT CUT
REC R
BIAS
GND
REC L
CRO2
CON2

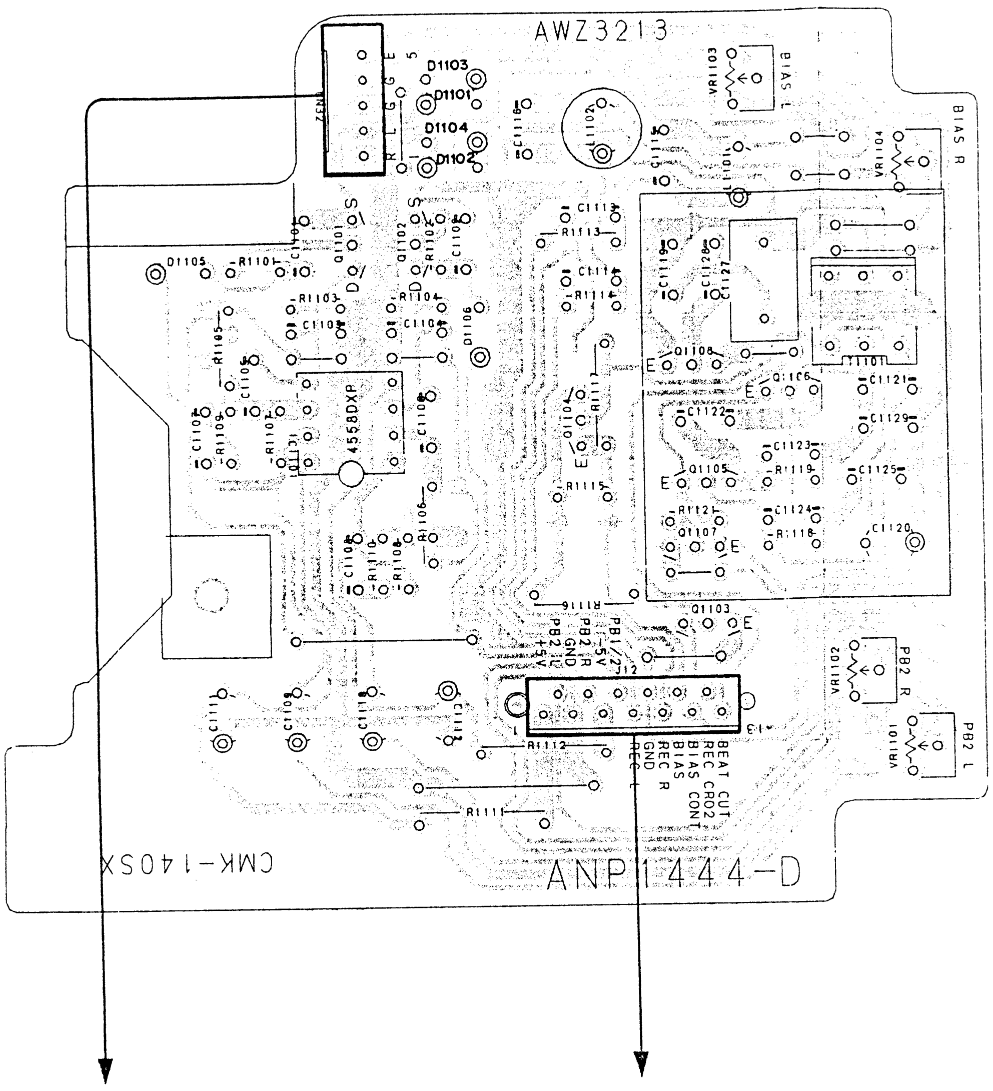


TO
POWER ASSEMBLY
CN12

TO
MECHANISM
UNIT PR
J32

TO
MECHANISM
UNIT PB
J31

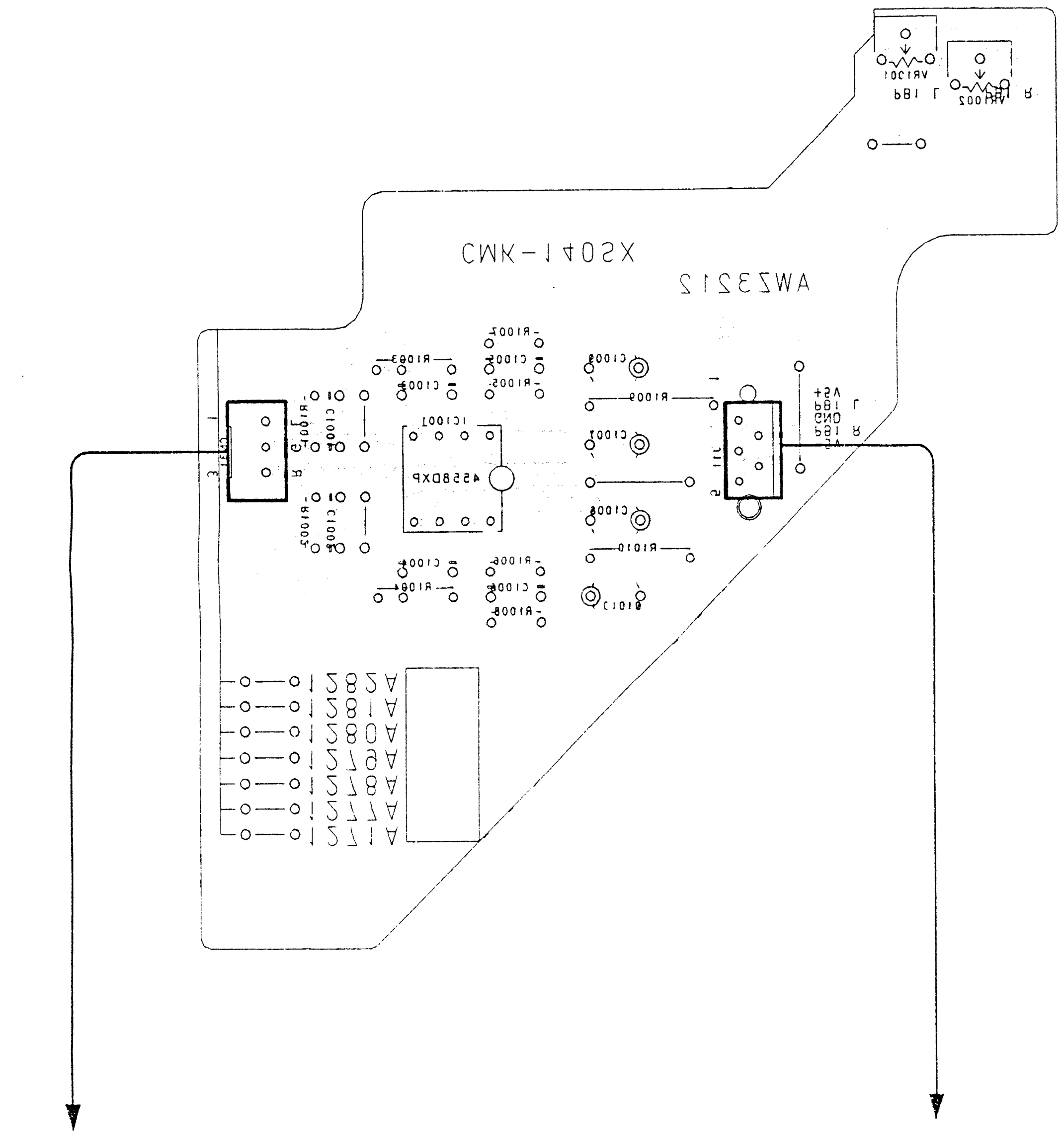
DECK-2 ASSEMBLY (AWZ 3213)


AWZ3213
ANP1444-D
CMK-140SX
BIAS L
BIAS R
VR1103
VR1104
VR1102
VR1101
PB2 R
PB2 L
4558DXP
D1103
D1101
D1104
D1102
D1105
BEAT CUT
REC CRO2
BIAS CON
BIAS
REC R
GND
REC L
PB2 L
PB2 R
GND
PB1 5V
J12

TO
MECHANISM
UNIT PR
J32

TO
POWER ASSEMBLY
CN12

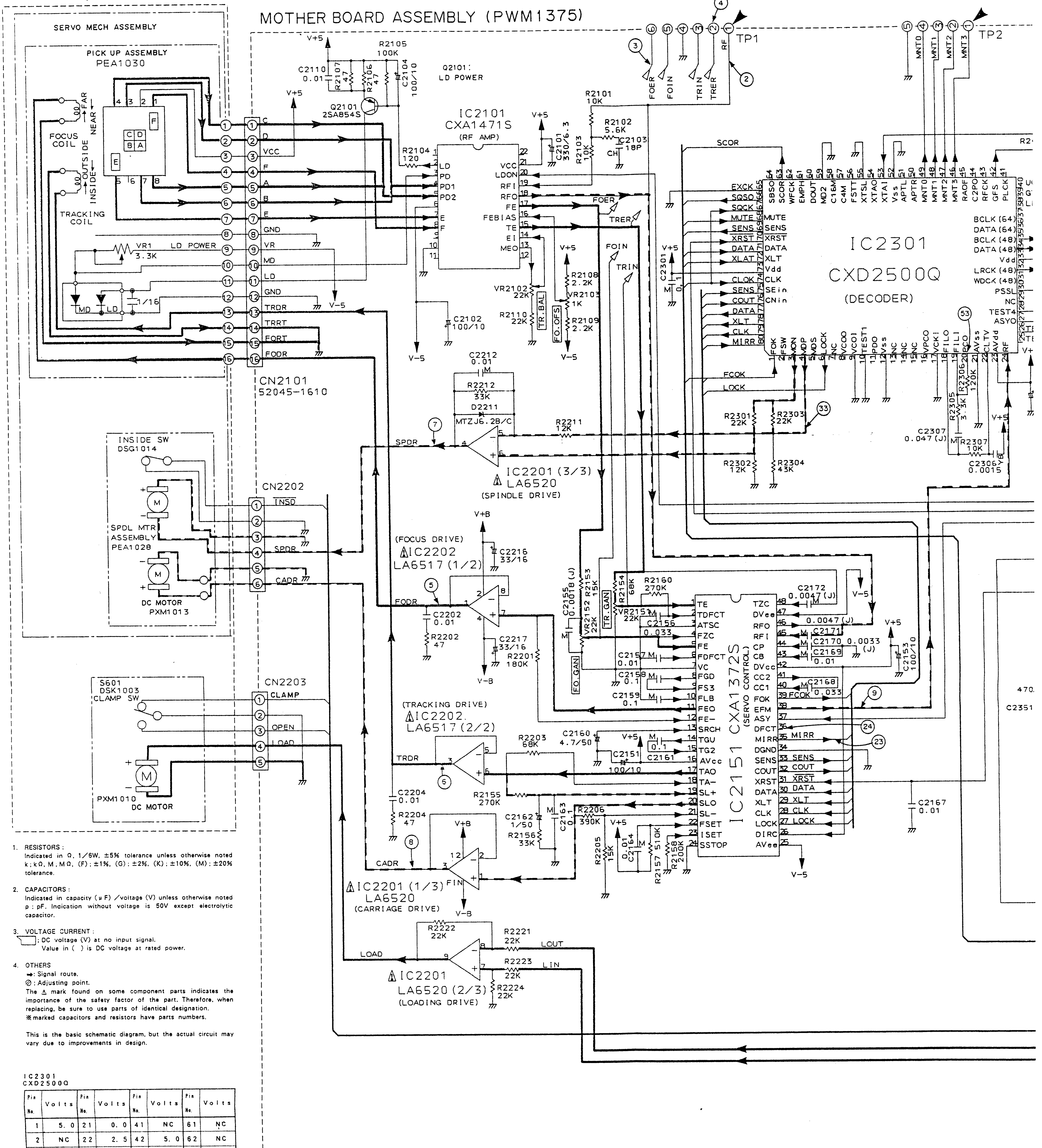
DECK-1 ASSEMBLY (AWZ 3212)


AWZ3212
CMK-140SX
4558DXP
VR1001
VR1002
PB1 L
R
+5V
PB1 L
GND
PB1 R
IC1001

TO
MECHANISM
UNIT PB
J31

TO
POWER ASSEMBLY
CN11

5.7 CD SECTION (PWM1375)


MOTHER BOARD ASSEMBLY (PWM1375)
SERVO MECH ASSEMBLY
PICK UP ASSEMBLY
PEA1030
FOCUS COIL
TRACKING COIL
FAR
NEAR
OUTSIDE
INSIDE
VR1 3.3K
LD POWER
MD
LD
1/16
CN2101
52045-1610
C
D
VCC
F
A
B
E
GND
VR
MD
LD
GND
TRDR
TRRT
FORT
FODR
R2105 100K
C2110 0.01
R2107 47
R2106 47
C2104 100/10
Q2101: LD POWER
Q2101 2SA854S
IC2101
CXA1471S
(RF AMP)
R2104 120
LD
PD
PD1
PD2
E
F
VCC
LDON
RFI
RFO
FE
FEBIAS
TE
EI
MEO
C2101 330/6.3
R2103 10K
R2101 10K
R2102 5.6K
C2103 18P
C2102 100/10
VR2102 22K
R2110 22K
TR.BAL
FO.OFS
R2108 2.2K
VR2103 1K
R2109 2.2K
FOER
TRER
FOIN
TRIN
RF
TP1
TP2
MNT0
MNT1
MNT2
MNT3
SCOR
IC2301
CXD2500Q
(DECODER)
EXCK
SQSO
SQCK
MUTE
SENS
XRST
DATA
XLAT
CLOK
SEIN
CNIN
COUT
XLT
CLK
MIRR
FCOK
LOCK
BCLK (64)
DATA (64)
BCLK (48)
DATA (48)
Vdd
LRCK (48)
WDCK (48)
PSSL
NC
TEST4
ASYO
R2301 22K
R2303 22K
R2302 12K
R2304 43K
R2305 3.3K
R2306 120K
C2307 0.047 (J)
R2307 10K
C2306 0.0015
C2212 0.01
R2212 33K
D2211 MTZJ6.2B/C
R2211 12K
SPDR
IC2201 (3/3) LA6520
(SPINDLE DRIVE)
INSIDE SW
DSG1014
SPDL MTR ASSEMBLY
PEA1028
DC MOTOR
PXM1013
CN2202
INSD
SPDR
CADR
(FOCUS DRIVE)
IC2202 LA6517 (1/2)
C2216 33/16
C2202 0.01
R2202 47
C2217 33/16
R2201 180K
FODR
S601
DSK1003
CLAMP SW
CN2203
CLAMP
OPEN
LOAD
PXM1010
DC MOTOR
(TRACKING DRIVE)
IC2202 LA6517 (2/2)
TRDR
C2204 0.01
R2204 47
R2203 68K
C2160 4.7/50
R2155 270K
C2151 100/10
C2161
C2162 1/50
R2156 33K
C2163
R2206 390K
R2205 15K
C2164 0.01
R2157 510K
R2158 200K
CADR
IC2201 (1/3) LA6520
(CARRIAGE DRIVE)
FIN
R2222 22K
R2221 22K
R2223 22K
R2224 22K
LOUT
LIN
LOAD
IC2201 LA6520 (2/3)
(LOADING DRIVE)
IC2151
CXA1372S
(SERVO CONTROL)
TE
TDFCT
ATSC
FZC
FE
FDFCT
VC
FGD
FS3
FLB
FEO
FE-
SRCH
TGU
TG2
AVcc
TAO
TA-
SL+
SLO
SL-
FSET
ISET
SSTOP
TZC
DVee
RFO
RFI
CP
CB
DVcc
CC2
CC1
FOK
EFM
ASY
DFCT
MIRR
DGND
SENS
COUT
XRST
DATA
XLT
CLK
LOCK
DIRC
AVee
C2155 0.0018 (J)
R2153 15K
R2154 68K
R2160 270K
C2172 0.0047 (J)
VR2151 22K
VR2152 22K
TR.GAN
FO.GAN
C2156 0.033
C2157 0.01
C2158 0.1
C2159 0.1
C2171 0.0047 (J)
C2170 0.0033 (J)
C2169 0.01
C2168 0.033
C2153 100/10
C2167 0.01
C2301 0.1
C2351
470
V+5
V-5
V+B
V-B

1. RESISTORS :
   Indicated in Ω, 1/6W, ±5% tolerance unless otherwise noted k ; kΩ, M ; MΩ, (F) ; ±1%, (G) ; ±2%, (K) ; ±10%, (M) ; ±20% tolerance.
2. CAPACITORS :
   Indicated in capacity (μF) /voltage (V) unless otherwise noted p : pF. Indication without voltage is 50V except electrolytic capacitor.
3. VOLTAGE CURRENT :
   ; DC voltage (V) at no input signal.
   Value in ( ) is DC voltage at rated power.
4. OTHERS
   ➡: Signal route.
   ⊘ ; Adjusting point.
   The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
   ※marked capacitors and resistors have parts numbers.

   This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

IC2301
CXD2500Q

Pin No.	Volts	Pin No.	Volts	Pin No.	Volts	Pin No.	Volts
1	5.0	21	0.0	41	NC	61	NC
2	NC	22	2.5	42	5.0	62	NC
3	5.0	23	5.0	43	NC	63	0.0
4	2.6	24	2.5	44	NC	64	NC
5	NC	25	NC	45	NC	65	0.0
6	5.0	26	0.0	46	4.4	66	3.3 ~4.6
7	NC	27	2.5	47	0.0	67	5.0
8	NC	28	0.0	48	0.0	68	0.0
9	0.0	29	NC	49	0.0 ~0.3	69	2.1 ~3.0
10	0.0	30	0.0	50	NC	70	5.0
11	NC	31	NC	51	NC	71	5.0
12	0.0	32	2.5	52	0.0	72	5.0
13	NC	33	5.0	53	2.5	73	5.0
14	NC	34	2.5	54	NC	74	5.0
15	NC	35	2.5	55	0.0	75	5.0
16	NC	36	NC	56	NC	76	0.0
17	0.0	37	NC	57	NC	77	5.0
18	2.5	38	NC	58	NC	78	5.0
19	2.4	39	NC	59	0.0	79	5.0
20	2.4	40	NC	60	NC	80	0.0

IC2351
PD4317A

Pin No.	Volts	Pin No.	Volts	Pin No.	Volts	Pin No.	Volts
1	NC	17	0.5	33	0.0	49	0.6
2	NC	18	5.0	34	5.0	50	-5.8
3	NC	19	5.0	35	NC	51	5.0
4	NC	20	0.0	36	5.0	52	0.0
5	5.0	21	0.0	37	0.0	53	0.0
6	5.0	22	0.0	38	4.6 ~4.7	54	NC
7	5.0	23	0.0	39	5.0	55	NC
8	3.8 ~3.9	24	5.0	40	0.6	56	0.0
9	5.0	25	5.0	41	0.6	57	0.0
10	5.0	26	0.0	42	0.6	58	0.0
11	5.0	27	0.0	43	0.6	59	0.0
12	1.1 ~1.3	28	0.0	44	0.6	60	0.0
13	5.0	29	5.0	45	0.6	61	NC
14	0.0	30	2.4	46	0.6	62	NC
15	5.0	31	2.5	47	0.6	63	NC
16	5.0	32	0.0	48	0.6	64	5.0

IC2101
CXA1471S

Pin No.	Volts	Pin No.	Volts
1	NC	12	NC
2	2.9	13	-0.9
3	-4.7	14	-0.7
4	0.0	15	0.0
5	0.0	16	0.0
6	-5.0	17	0.0
7	0.0	18	0.8
8	0.0	19	0.0
9	NC	20	5.0
10	0.0	21	5.0
11	NC	22	NC

IC2404
NJM4558D-D

Pin No.	Volts
1	-0.2
2	1.0
3	1.0
4	-5.0
5	1.0
6	1.0
7	-0.2
8	5.0

IC2202
LA6517

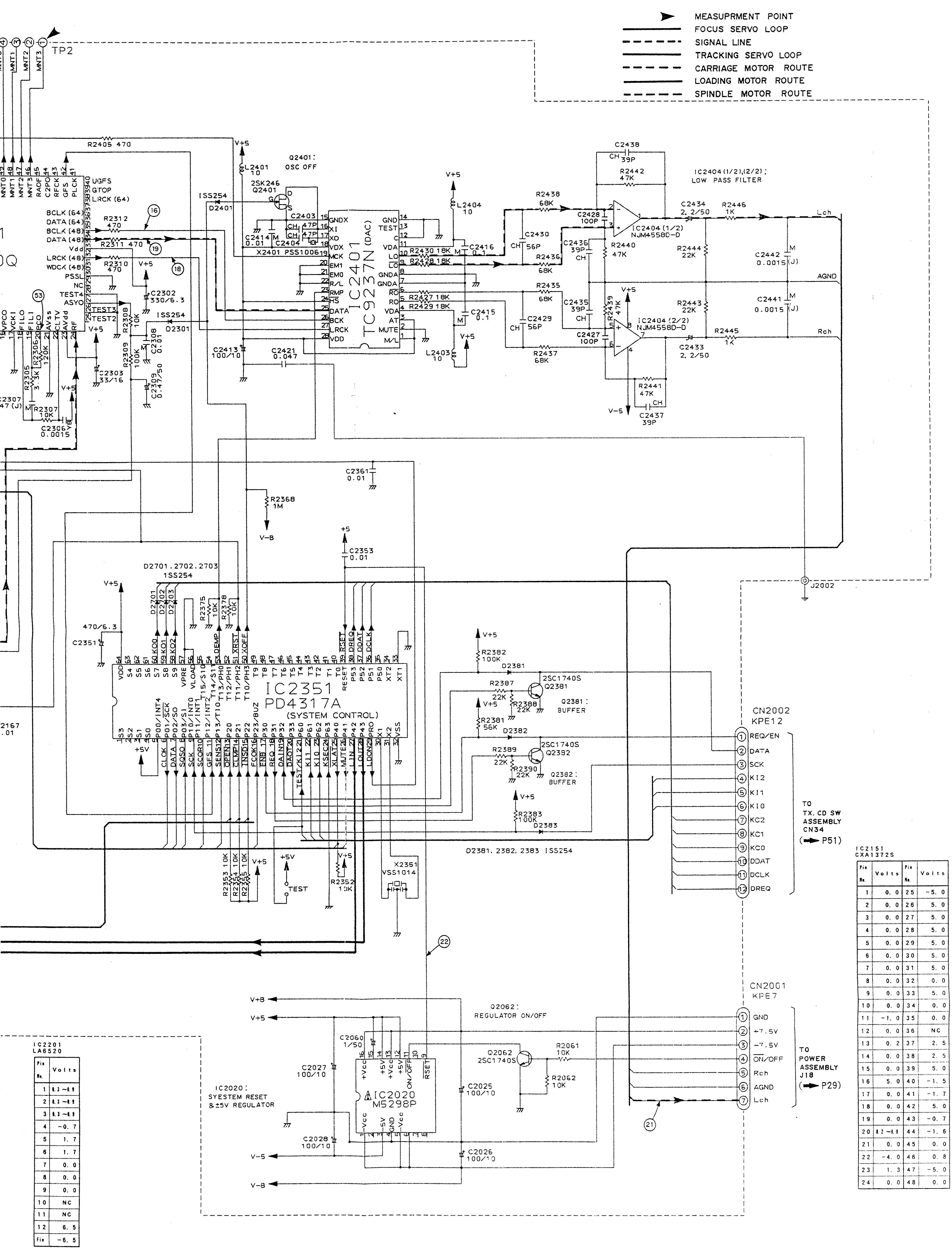
Pin No.	Volts
1	0.0
2	6.5
3	0.0
4	-6.5
5	0.0
6	0.0
7	0.0
8	0.0

IC2020
M5298P

Pin No.	Volts
1	-6.5
2	NC
3	-5.0
4	0.0
5	-6.5
6	-5.7
7	3.3
8	1.1
9	5.0
10	1.1
11	0.6
12	5.0
13	6.5
14	5.0
15	1.2
16	6.5

IC2201
LA6520

Pin No.	Volts
1	0.3 ~0.9
2	0.3 ~0.9
3	0.3 ~0.9
4	-0.7
5	1.7
6	1.7
7	0.0
8	0.0
9	0.0
10	NC
11	NC
12	6.5
Fin	-6.5


MEASUPRMENT POINT
FOCUS SERVO LOOP
SIGNAL LINE
TRACKING SERVO LOOP
CARRIAGE MOTOR ROUTE
LOADING MOTOR ROUTE
SPINDLE MOTOR ROUTE
TP2
MNT0
MNT1
MNT2
MNT3
R2405 470
V+5
L2401 10
Q2401: OSC OFF
2SK246 Q2401
1SS254 D2401
C2403
C2414 M 0.01
C2404
X2401 PSS1006
IC2401
TC9237N (DAC)
GNDX
XI
XO
VDX
MCK
EM1
EMO
R/L
RMP
HS
DATA
BCK
LRCK
VDD
GND
TEST
VDA
LO
GNDA
RO
AT
MUTE
M/L
L2404 10
C2416 0.1
R2430 18K
R2428 18K
R2427 18K
R2429 18K
C2415 0.1
L2403 10
C2413 100/10
C2421 0.047
UGFS
GTOP
LRCK (64)
BCLK (64)
DATA (64)
BCLK (48)
DATA (48)
Vdd
LRCK (48)
WDCK (48)
PSSL
NC
TEST4
ASYO
TEST3
TEST2
R2312 470
R2311 470
R2310 470
C2302 330/6.3
R2308 10K
1SS254 D2301
C2308 0.01
R2309 100K
C2303 33/16
C2309 0.47/50
R2305 3.3K
R2306 120K
C2307 0.047 (J)
R2307 10K
C2306 0.0015
VPCO
VCKI
FILO
FILI
PCO
AVss
CLTV
AVdd
RF
RAOF
C2PO
RFCK
GFS
PLCK
16
18
19
53
C2438 CH 39P
R2442 47K
IC2404(1/2),(2/2): LOW PASS FILTER
R2438 68K
C2428 100P
C2430 CH 56P
R2436 68K
C2436 39P CH
R2440 47K
IC2404 (1/2) NJM4558D-D
C2434 2.2/50
R2446 1K
Lch
R2444 22K
C2442 0.0015 M (J)
AGND
R2435 68K
C2429 CH 56P
C2435 39P CH
R2439 47K
IC2404 (2/2) NJM4558D-D
R2443 22K
C2441 0.0015 M (J)
C2427 100P
R2437 68K
R2445 1K
Rch
C2433 2.2/50
R2441 47K
C2437 39P CH
V-5
J2002
C2361 0.01
R2368 1M
V-B
+5
C2353 0.01
D2701.2702.2703 1SS254
470/6.3
C2351
R2375 10K
R2378 10K
IC2351
PD4317A
(SYSTEM CONTROL)
VDD
KO0
KO1
KO2
VPRE
VLOAD
T15/S10
T14/S11
DEMP
XRST
XOFF
T13/PH0
T12/PH1
T11/PH2
T10/PH3
RSET
DREQ
DDAT
DCLK
RESET
P53
P52
P51
P50
XT2
XT1
P00/INT4
P01/SCK
P02/SO
P03/SI
P10/INT0
P11/INT1
P12/INT2
P13/T10
P20
P21
P22
P23/BUZ
P30
P31
P32
P33
P60
P61
P62
P63
P40
P41
P42
P43
PRO
X1
X2
VSS
CLOK
DATA
SQSO
SCK
SCOR
GFS
SENS
OPEN
CLMP
INSD
FCOK
ENB
REQ
DAIN
DAOT
TEST/KL2
K11
K10
KSEC
XLAT
MUTE
LIN
LOUT
LDON
+5V
R2353 10K
R2354 10K
R2355 10K
TEST
R2352 10K
X2351 VSS1014
V+5
R2382 100K
D2381
R2387 22K
R2388 22K
2SC1740S Q2381
Q2381: BUFFER
R2381 56K
D2382
R2389 22K
R2390 22K
2SC1740S Q2382
Q2382: BUFFER
R2383 100K
D2383
D2381, 2382, 2383 1SS254
CN2002 KPE12
REQ/EN
DATA
SCK
KI2
KI1
KI0
KC2
KC1
KC0
DDAT
DCLK
DREQ
TO TX. CD SW ASSEMBLY CN34 (➡ P51)
2167 .01
22
V+8
V+5
Q2062: REGULATOR ON/OFF
C2060 1/50
C2027 100/10
IC2020
M5298P
+Vcc
+5V
ON/OFF
RSET
-Vcc
-5V
GND
C2025 100/10
Q2062 2SC1740S
R2061 10K
R2062 10K
IC2020: SYESTEM RESET & ±5V REGULATOR
C2028 100/10
C2026 100/10
V-5
V-8
CN2001 KPE7
GND
+7.5V
-7.5V
ON/OFF
Rch
AGND
Lch
TO POWER ASSEMBLY J18 (➡ P29)
21

IC2151
CXA1372S

Pin No.	Volts	Pin No.	Volts
1	0.0	25	-5.0
2	0.0	26	5.0
3	0.0	27	5.0
4	0.0	28	5.0
5	0.0	29	5.0
6	0.0	30	5.0
7	0.0	31	5.0
8	0.0	32	0.0
9	0.0	33	5.0
10	0.0	34	0.0
11	-1.0	35	0.0
12	0.0	36	NC
13	0.2	37	2.5
14	0.0	38	2.5
15	0.0	39	5.0
16	5.0	40	-1.5
17	0.0	41	-1.7
18	0.0	42	5.0
19	0.0	43	-0.7
20	0.2~0.8	44	-1.6
21	0.0	45	0.0
22	-4.0	46	0.8
23	1.3	47	-5.0
24	0.0	48	0.0

IC2201
LA6520

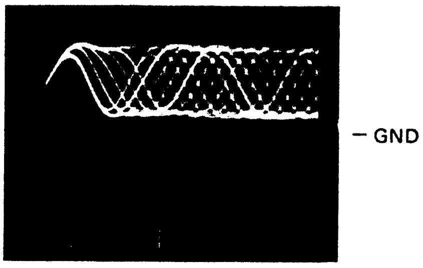
Pin No.	Volts
1	0.3~0.9
2	0.3~0.9
3	0.3~0.9
4	-0.7
5	1.7
6	1.7
7	0.0
8	0.0
9	0.0
10	NC
11	NC
12	6.5
Fin	-6.5

Waveforms

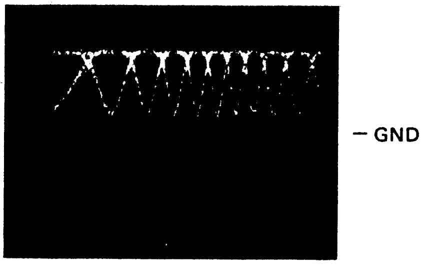
Note: The encircled numbers denote measuring points in the schematic diagram.

*1 50T-JUMP: After switching to the pause mode, press the manual search key.
*2 FOCUS-IN: Press the key without loading a disc.

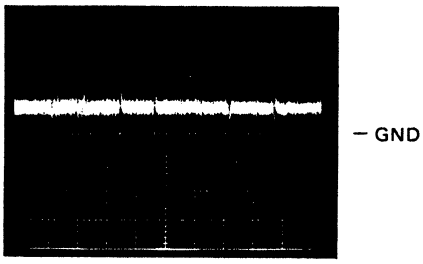
② TP1-Pin 1: PLAY MODE
(RF)
500mV/div 500nsec/div



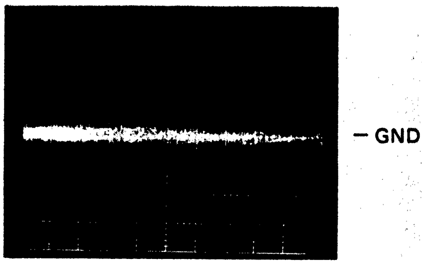
② TP1-Pin 1: TRACK SEARCH MODE
(RF)
500mV/div 200μsec/div



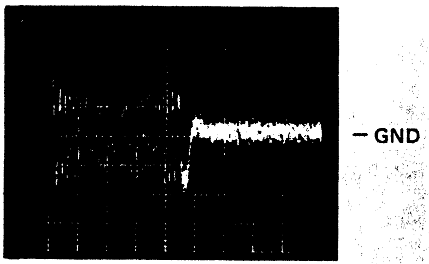
③ TP1-Pin 6: PLAY MODE
(FOER)
100mV/div 10msec/div



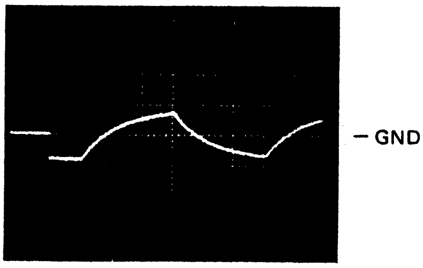
④ TP1-Pin 2: PLAY MODE
(TRER)
1V/div 10msec/div



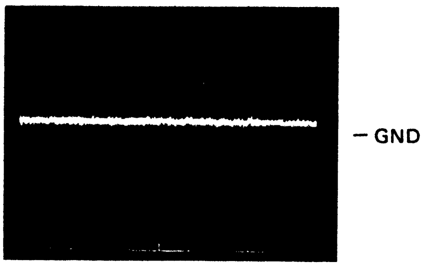
④ TP1-Pin 2: 50T-JUMP (*1) MODE
(TRER)
1V/div 1msec/div



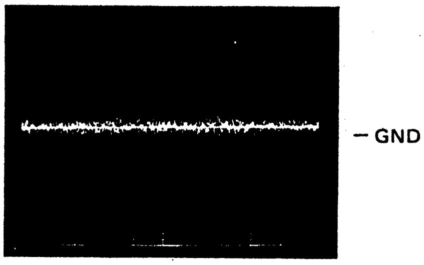
⑤ IC2202-Pin 1: FOCUS-IN (*2) MODE
(FODR)
1V/div 200msec/div



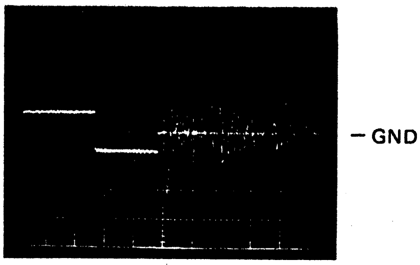
⑤ IC2202-Pin 1: PLAY MODE
(FODR)
1V/div 1msec/div



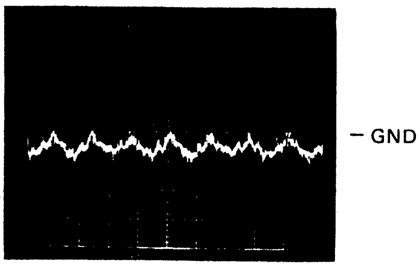
⑥ IC2202-Pin 3: PLAY MODE
(TRDR)
500mV/div 1msec/div



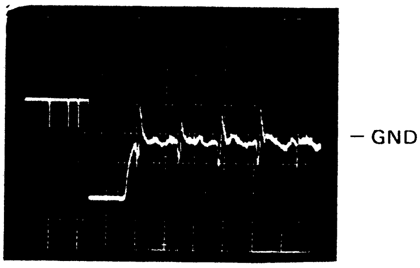
⑥ IC2202-Pin 3: 50T-JUMP (*1) MODE
(TRDR)
500mV/div 1msec/div



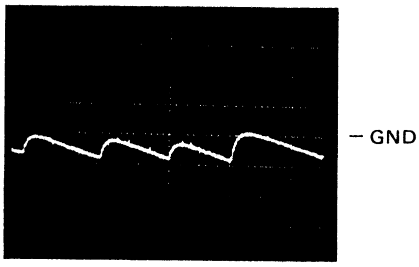
⑦ IC2201-Pin 4: PLAY MODE
(SPDR)
1V/div 50msec/div



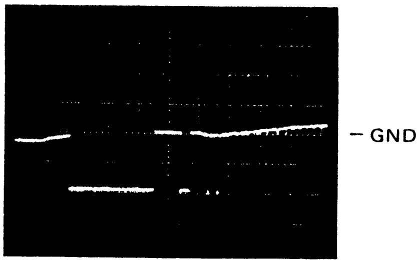
⑦ IC2201-Pin 4: TRACK SEARCH MODE
(SPDR)
2V/div 50msec/div



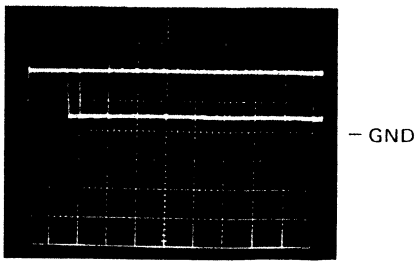
⑧ IC2201-Pin 3: PLAY MODE
(CADR)
1V/div 2S/div



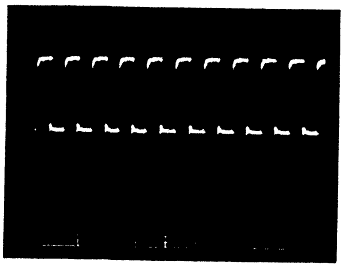
⑧ IC2201-Pin 3: TRACK SEARCH MODE
(CADR)
2V/div 200msec/div



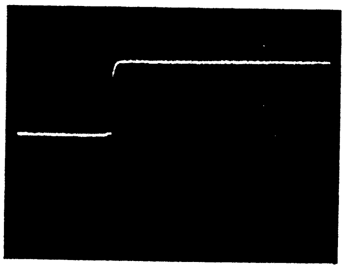
⑨ IC2151-Pin 38: PLAY MODE
(EFM)
2V/div 500nsec/div



⑯ IC2301-Pin 35: PLAY MODE (1kHz)
(BCLK)
2V/div 500nsec/div

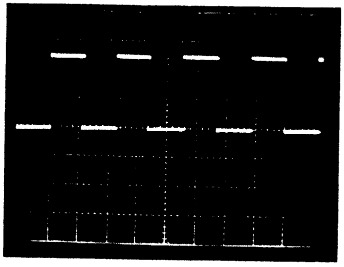


㉒ IC2020-Pin 9: POWER SWITCH-ON
(RST)
2V/div 100msec/div

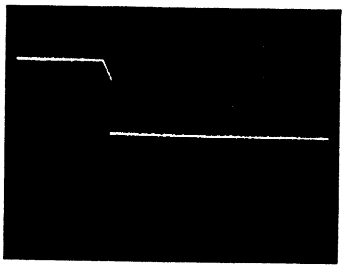


㉖

⑱ IC2301-Pin 32: PLAY MODE (1kHz)
(LRCK)
2V/div 10μsec/div

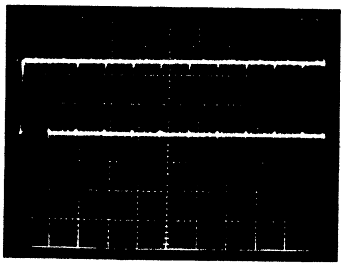


㉒ IC2020-Pin 9: POWER SWITCH-OFF
(RST)
2V/div 100msec/div

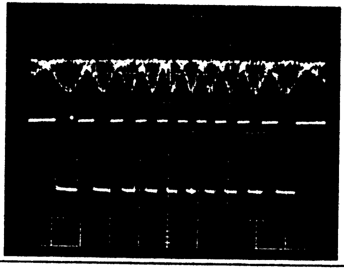


㉗

⑲ IC2301-Pin34: PLAY MODE (1kHz)
(DATA)
2V/div 500nsec/div



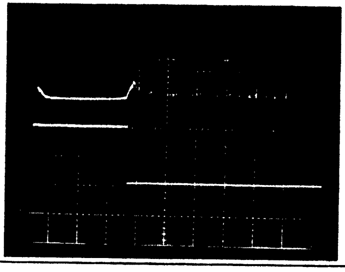
㉓ : TRACK SEARCH MODE
Upper: TP1-Pin 1 (RF) 1V/div
Lower: IC2151-Pin 35 (MIRR)
2V/div 200μsec/div



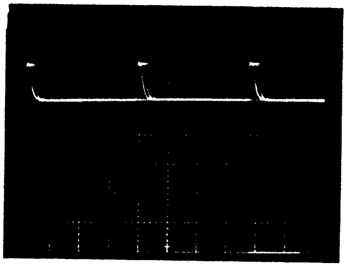
㉘

⑳

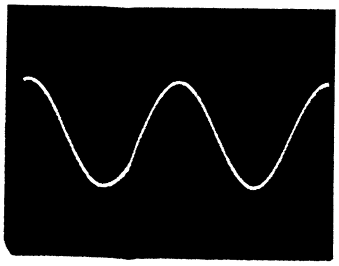
㉔ : PLAY MODE
Upper: TP1-Pin 1 (RF) 1V/div
Lower: IC2151-Pin 36 (DFCT)
5V/div 200μsec/div



㉝ IC2301-Pin 4: PLAY MODE
(MDP)
2V/div 2μsec/div

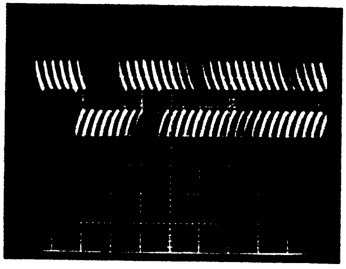


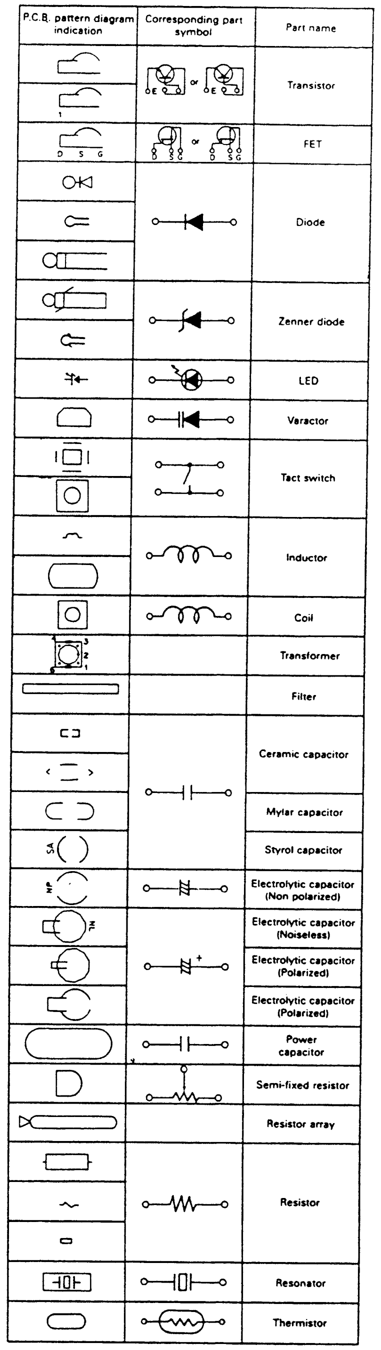
㉑ Pin-OUTPUT: PLAY MODE (1kHz)
CN2001-Pin7
1V/div 200μsec/div



㉕

(53) IC2301-Pin 20: PLAY MODE
(PCO)
2V/div 10μsec/div



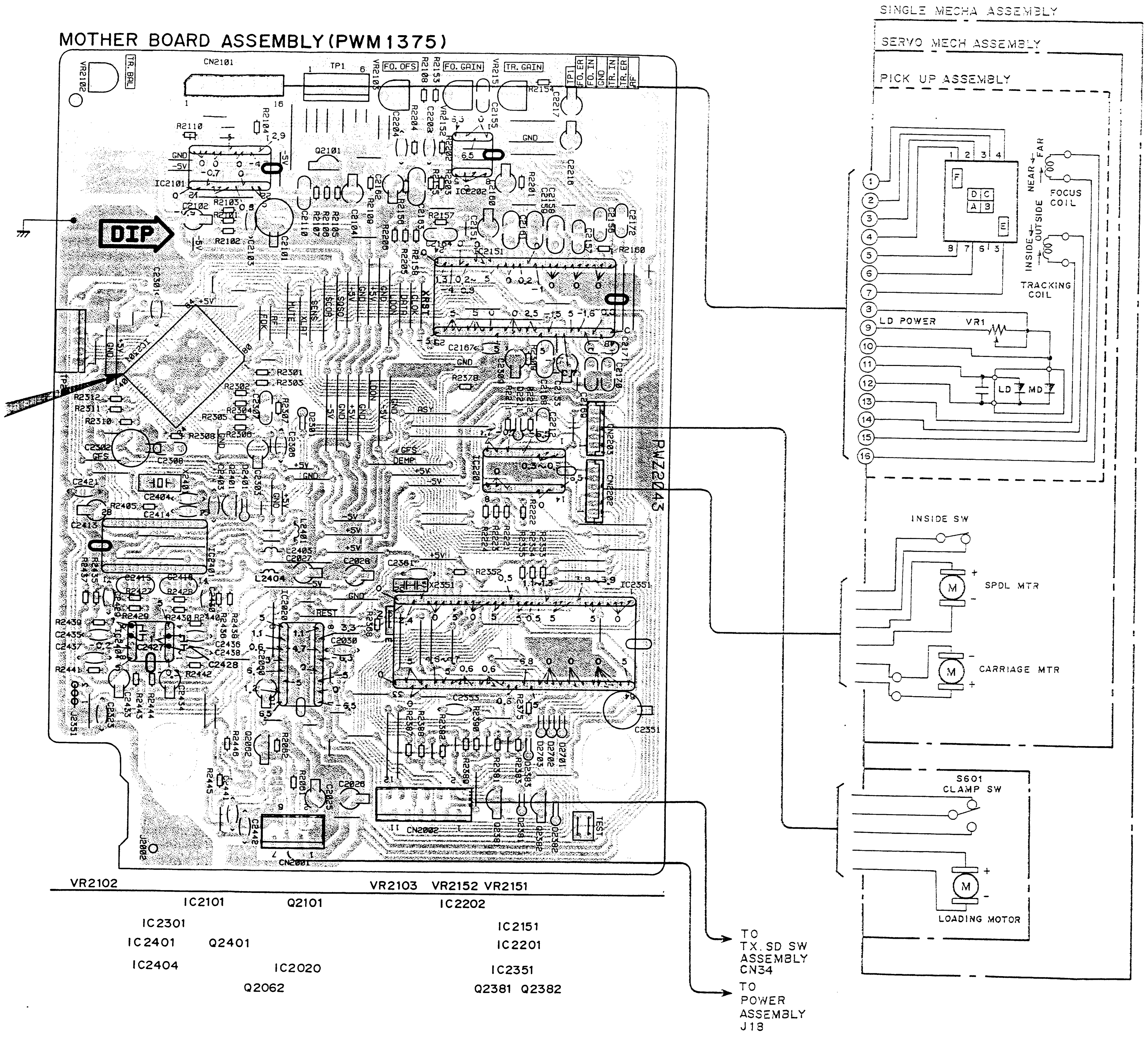

P.C.B. pattern diagram indication
Corresponding part symbol
Part name
Transistor
FET
Diode
Zenner diode
LED
Varactor
Tact switch
Inductor
Coil
Transformer
Filter
Ceramic capacitor
Mylar capacitor
Styrol capacitor
Electrolytic capacitor (Non polarized)
Electrolytic capacitor (Noiseless)
Electrolytic capacitor (Polarized)
Electrolytic capacitor (Polarized)
Power capacitor
Semi-fixed resistor
Resistor array
Resistor
Resonator
Thermistor
A
B
C
D

1. This P.C.B. connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the above Table.
3. The capacitor terminal marked with ▭ shows negative terminal.
4. The diode marked with ○ shows cathode side.
5. The transistor terminal marked with ▭ shows emitter.

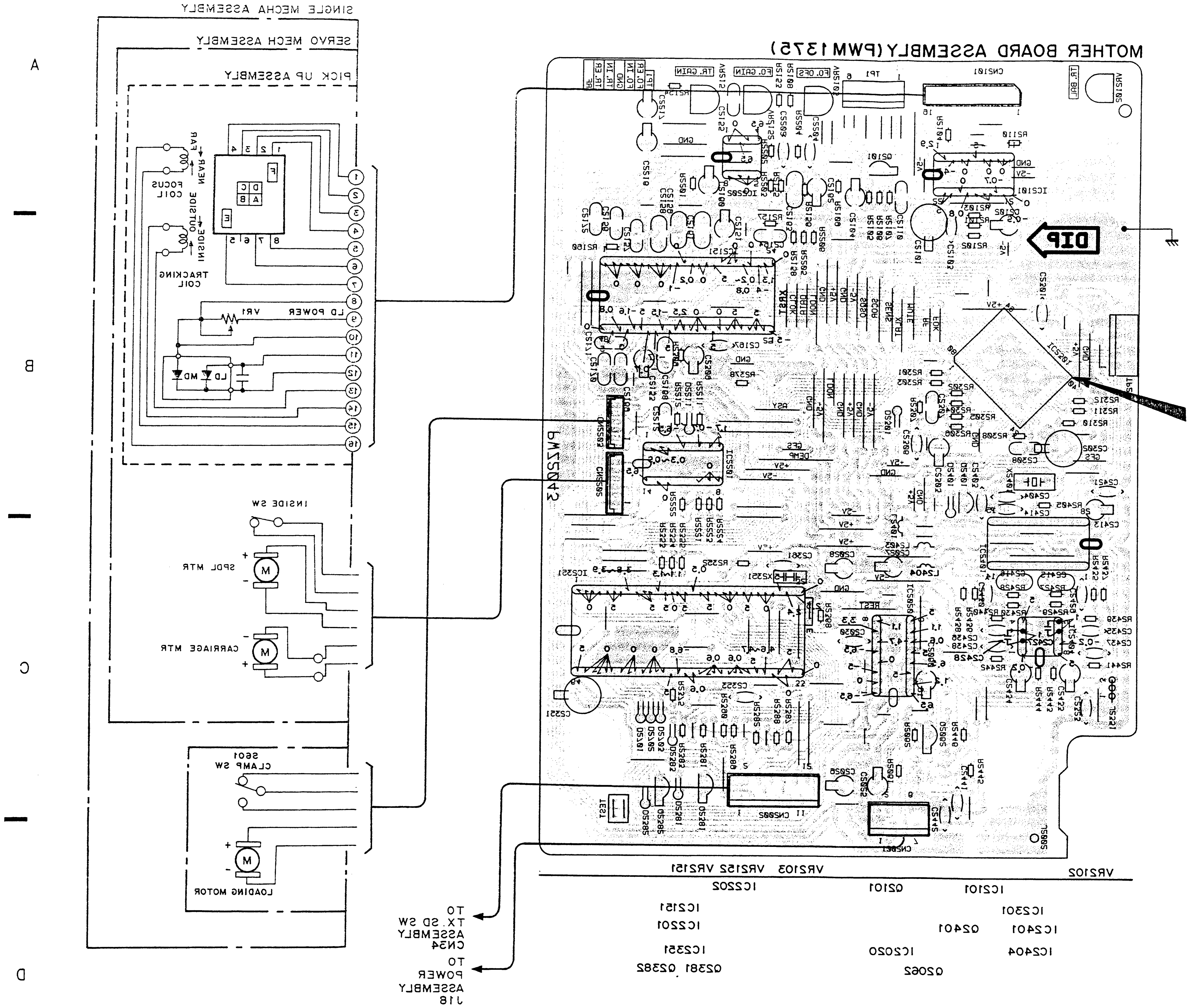
IC2301
CXD2500Q

Pin No.	Volts	Pin No.	Volts	Pin No.	Volts
1	5	31	N. C	61	N. C
2	N. C	32	2. 5	62	N. C
3	5	33	5	63	0
4	2. 6	34	2. 5	64	N. C
5	N. C	35	2. 5	65	0
6	5	36	N. C	66	3.3~4.6
7	N. C	37	N. C	67	5
8	N. C	38	N. C	68	0
9	0	39	N. C	69	2.1~3
10	0	40	N. C	70	5
11	N. C	41	N. C	71	5
12	0	42	5	72	5
13	N. C	43	N. C	73	5
14	N. C	44	N. C	74	5
15	N. C	45	N. C	75	5
16	N. C	46	4. 4	76	0
17	0	47	0	77	5
18	2. 5	48	0	78	5
19	2. 4	49	0~0.3	79	5
20	2. 4	50	N. C	80	0
21	0	51	N. C		
22	2. 5	52	0		
23	5	53	2. 5		
24	2. 5	54	N. C		
25	N. C	55	0		
26	0	56	N. C		
27	2. 5	57	N. C		
28	0	58	N. C		
29	N. C	59	0		
30	0	60	N. C		

MOTHER BOARD ASSEMBLY (PWM1375)


DIP
PWZ2043
CN2101
TP1
VR2102
TR. BAL
FO. OFS
FO. GAIN
TR. GAIN
TP1
FO. ER
FO. IN
GND
TR. IN
TR. ER
RF
IC2101
Q2101
IC2202
IC2151
IC2301
IC2201
IC2351
IC2020
X2351
CN2201
CN2202
CN2001
CN2002
TEST
J2002
GND
+5V
-5V
VR2102
IC2101
Q2101
VR2103 VR2152 VR2151
IC2202
IC2301
IC2401
Q2401
IC2404
IC2020
Q2062
IC2151
IC2201
IC2351
Q2381 Q2382
TO TX.SD SW ASSEMBLY CN34
TO POWER ASSEMBLY J18
SINGLE MECHA ASSEMBLY
SERVO MECH ASSEMBLY
PICK UP ASSEMBLY
1 2 3 4
F
D C
A B
E
8 7 6 5
NEAR
FAR
FOCUS COIL
INSIDE
OUTSIDE
TRACKING COIL
LD POWER
VR1
LD
MD
①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
⑪
⑫
⑬
⑭
⑮
⑯
INSIDE SW
SPDL MTR
M
CARRIAGE MTR
S601
CLAMP SW
LOADING MOTOR
A
B
C
D

This P.C.B. connection diagram is viewed from the foil side.


MOTHER BOARD ASSEMBLY (PWM1375)
SINGLE MECHA ASSEMBLY
SERVO MECH ASSEMBLY
PICK UP ASSEMBLY
FOCUS COIL
TRACKING COIL
LD POWER
VR1
INSIDE SW
SPDL MTR
CARRIAGE MTR
S601 CLAMP SW
LOADING MOTOR
TO TX.SD SW ASSEMBLY CN54
TO POWER ASSEMBLY J18
DIP
PWZ2043
VR2102
VR2103
VR2151
VR2152
IC2101
Q2101
IC2202
IC2151
IC2201
IC2351
Q2381
Q2382
IC2301
IC2401
Q2401
IC2020
Q2062
IC2404

IC2301
CXD2500Q

Pin No.	Volts	Pin No	Volts	Pin No	Volts
1	5	31	N.C	61	N.C
2	N.C	32	2.5	62	N.C
3	5	33	5	63	0
4	2.6	34	2.5	64	N.C
5	N.C	35	2.5	65	0
6	5	36	N.C	66	3.3~4.6
7	N.C	37	N.C	67	5
8	N.C	38	N.C	68	0
9	0	39	N.C	69	2.1~3
10	0	40	N.C	70	5
11	N.C	41	N.C	71	5
12	0	42	5	72	5
13	N.C	43	N.C	73	5
14	N.C	44	N.C	74	5
15	N.C	45	N.C	75	5
16	N.C	46	4.4	76	0
17	0	47	0	77	5
18	2.5	48	0	78	5
19	2.4	49	0~0.3	79	5
20	2.4	50	N.C	80	0
21	0	51	N.C		
22	2.5	52	0		
23	5	53	2.5		
24	2.5	54	N.C		
25	N.C	55	0		
26	0	56	N.C		
27	2.5	57	N.C		
28	0	58	N.C		
29	N.C	59	0		
30	0	60	N.C		

6. P.C.B's PARTS LIST

NOTES:

- Parts without part number cannot be supplied.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%)

560 Ω → 56 × 10^1 → 561 ································ RD1/4PS$\boxed{5}\boxed{6}\boxed{1}$J
47k Ω → 47 × 10^3 → 473 ································ RD1/4PS$\boxed{4}\boxed{7}\boxed{3}$J
0.5 Ω → 0R5 ·· RN2H$\boxed{0}\boxed{R}\boxed{5}$K
1 Ω → 010 ·· RS1P$\boxed{0}\boxed{1}\boxed{0}$K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω → 562 × 10^1 → 5621 ······························ RN1/4SR$\boxed{5}\boxed{6}\boxed{2}\boxed{1}$F

Mark	No.	Description	Part No.
	SPACER ASSEMBLY		
	There is no supply part in this assembly.		
⊙	**VOLUME ASSEMBLY (AWZ3224)**		
	SEMICONDUCTORS		
	IC601		RC4558DXP
	IC602	MECHANISM DRIVER IC	TA7291S
	CAPACITORS		
	C601, 602	ELECTR. CAPACITOR	CEAS4R7M50
	C605, 606	ELECTR. CAPACITOR	CEAS470M10
	C607	CERAMIC CAPACITOR	CKCYF473Z50
	RESISTORS		
	R605-608	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R612, 613	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R615-618	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	VR601	VARIABLE RESISTOR	ACX1053
⊙	**DECK SW ASSEMBLY (AWZ3225)**		
	SEMICONDUCTORS		
	D1401-1404	LED(GREEN)	AEL1132
	D1405	LED(RED)	AEL1131
	SWITCHES		
	S1401	SLIDE SWITCH	ASH1039
	S1402-1407	SWITCH	ASG1034
	S1409-1415	SWITCH	ASG1034
	RESISTORS		
	R1401-1403	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
⊙	**AF.TUNER ASSEMBLY (AWZ3359)**		
	SEMICONDUCTORS		
	IC101	PLL IC	LM7001
	IC201	AM/FM IC	LA1265S
	IC203	MPX IC	AN7470P
	IC302		MC14052BCP
	IC303		RC4558DXP
	IC305	DOLBY-B IC	CXA1100P
	IC307		RC4558DXP
	IC308		PD5147B
	Q101	TRANSISTOR	2SC2668
	Q204	N-FET	2SK246
	Q205	TRANSISTOR	XDA143ES
	Q206	TRANSISTOR	2SC1740SLN
	Q207	TRANSISTOR	XDA143ES
	Q208	TRANSISTOR	XDC124ES
	Q301-308	TRANSISTOR	2SC2458
	Q309	TRANSISTOR	XDA124ES
	Q316	TRANSISTOR	XDC124ES
	Q317	TRANSISTOR	2SA1515
	Q318	TRANSISTOR	XDC124ES
	Q319	TRANSISTOR	2SA1515
	Q320	TRANSISTOR	XDC124ES
	Q321	TRANSISTOR	2SA1515
	Q322-326	TRANSISTOR	XDC124ES
	Q327	TRANSISTOR	XDA124ES
	Q328	TRANSISTOR	XDC143ES
	Q335	TRANSISTOR	XDC143ES
	D203-206	DIODE	1SS252
	D301, 302	DIODE	1SS252
	D307-318	DIODE	1SS252
	D320-325	DIODE	1SS252
	D327	DIODE	1SS252
	D490-493	DIODE	1SS252
	D494-499	DIODE	1SS252
	SWITCHES		
	S101	SLIDE SWITCH	ASH1027
	S301	SLIDE SWITCH	ASH1031
	COILS/TRANSFORMERS		
	L202	COIL	ATE-079
	L203, 204	AXIAL INDUCTOR	LAU2R2M
	L303	AXIAL INDUCTOR	LAU220K
	F101	CERAMIC FILTER	ATF-107
	F202	CERAMIC FILTER	ATF-107
	F203	CERAMIC FILTER	ATF-208
	F301, 302	DOLBY FILTER	ATF1064

CAPACITORS

Mark	No.	Description	Part No.
	C101	CHIP CAPACITOR	CKSQYF223Z50
	C107	CHIP CAPACITOR	CKSQYF223Z50
	C201	CHIP CERAMIC C.	CCSQCH150J50
	C204	CHIP CERAMIC C.	CCSQCH150J50
	C205	CHIP CAPACITOR	CKSQYF103Z50
	C206	ELECTR. CAPACITOR	CEAS470M10
	C207	CHIP CAPACITOR	CKSQYF223Z50
	C208	CERAMIC CAPACITOR	CKDYX103M25
	C209	AUDIO FILM CAPACITOR	CFTXA224J50
	C210	CHIP CAPACITOR	CKSQYF223Z50
	C211	CERAMIC CAPACITOR	CKSQYF473Z50
	C212	CHIP CAPACITOR	CKSQYF223Z50
	C215	CERAMIC CAPACITOR	CKSQYB103K50
	C216	CERAMIC CAPACITOR	CCSQCH470J50
	C217	ELECTR. CAPACITOR	CEAS470M16
	C218	ELECTR. CAPACITOR	CEAS330M16
	C219	CHIP CAPACITOR	CKSQYF103Z50
	C220	CERAMIC CAPACITOR	CKSQYF473Z50
	C221, 222	CHIP CAPACITOR	CKSQYF223Z50
	C223	ELECTR. CAPACITOR	CEAS330M16
	C224	ELECTR. CAPACITOR	CEAS4R7M50
	C225	CHIP CAPACITOR	CKSQYF103Z50
	C226	ELECTR. CAPACITOR	CEAS010M50
	C227	CERAMIC CAPACITOR	CKSQYB471K50
	C228	CHIP CAPACITOR	CKSQYB222K50
	C230	CERAMIC CAPACITOR	CKDYX473M25
	C231	ELECTR. CAPACITOR	CEAS010M50
	C232	ELECTR. CAPACITOR	CEAS2R2M50
	C233	ELECTR. CAPACITOR	CEAS100M50
	C234	ELECTR. CAPACITOR	CEANP100M16
	C235	ELECTR. CAPACITOR	CEAS100M50
	C236	CERAMIC CAPACITOR	CKSQYF473Z50
	C237	ELECTR. CAPACITOR	CEAS101M16
	C238	CAPACITOR	ACE1039
	C240	ELECTR. CAPACITOR	CEAS1R5M50
	C241	ELECTR. CAPACITOR	CEAS3R3M50
	C242	ELECTR. CAPACITOR	CEAS470M16
	C243, 244	CERAMIC CAPACITOR	CKSQYB122K50
	C246	ELECTR. CAPACITOR	CEASR22M50
	C248	CHIP CAPACITOR	CKSQYF103Z50
	C255, 256	CERAMIC CAPACITOR	CKDYB822K50
	C265, 266	ELECTR. CAPACITOR	CEAS100M50
	C267	CERAMIC CAPACITOR	CKDYX223M25
	C295, 296	CERAMIC CAPACITOR	CKPUYB102K50
	C298	CERAMIC CAPACITOR	CCDSL101J50
	C299	CERAMIC CAPACITOR	CKDYF102Z50
	C317, 318	CHIP CAPACITOR	CCSQCH101J50
	C325, 326		CKSQYB273K50
	C327, 328	ELECTR. CAPACITOR	CEAS010M50
	C329	ELECTR. CAPACITOR	CEAS100M50
	C330	ELECTR. CAPACITOR	CEAS220M25
	C331, 332	ELECTR. CAPACITOR	CEAS0R1M50
	C333	ELECTR. CAPACITOR	CEAS470M16
	C334	CERAMIC CAPACITOR	CKSQYB473K50
	C335	ELECTR. CAPACITOR	CEASR68M50
	C336	ELECTR. CAPACITOR	CEAS101M10
	C337	ELECTR. CAPACITOR	CEASR68M50
	C338	ELECTR. CAPACITOR	CEAS220M16
	C339, 340	ELECTR. CAPACITOR	CEAS2R2M50
	C341-344	ELECTR. CAPACITOR	CEAS010M50
	C345, 346	CERAMIC CAPACITOR	CKCYB152K50
	C347	CERAMIC CAPACITOR	CKCYB102K50
	C350, 351	CERAMIC CAPACITOR	CKCYF473Z50
	C352	ELECTR. CAPACITOR	CEAS100M50
	C353, 354	CERAMIC CAPACITOR	CKDYF473Z50
	C363	CERAMIC CAPACITOR	CKCYB102K50
	C364	ELECTR. CAPACITOR	CEAS100M50
	C365, 366	CERAMIC CAPACITOR	CKSQYB152K50
	C367, 368	CERAMIC CAPACITOR	CKSQYF473Z50
	C369, 370	CHIP CAPACITOR	CKSQYF223Z50

RESISTORS

Mark	No.	Description	Part No.
	R102-108	CHIP RESISTOR	RS1/10S☐☐☐J
	R122	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R181, 182	CHIP RESISTOR	RS1/10S☐☐☐J
	R184, 185	CHIP RESISTOR	RS1/10S☐☐☐J
	R187	CHIP RESISTOR	RS1/10S☐☐☐J
	R204-211	CHIP RESISTOR	RS1/10S☐☐☐J
	R212	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R214	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R215-219	CHIP RESISTOR	RS1/10S☐☐☐J
	R220	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R221	CHIP RESISTOR	RS1/10S☐☐☐J
	R225	CHIP RESISTOR	RS1/10S☐☐☐J
	R227	CHIP RESISTOR	RS1/10S☐☐☐J
	R229	CHIP RESISTOR	RS1/10S☐☐☐J
	R231, 232	CHIP RESISTOR	RS1/10S☐☐☐J
	R234-237	CHIP RESISTOR	RS1/10S☐☐☐J
	R239-243	CHIP RESISTOR	RS1/10S☐☐☐J
	R248, 249	CHIP RESISTOR	RS1/10S☐☐☐J
	R254, 255	CHIP RESISTOR	RS1/10S☐☐☐J
	R283	CHIP RESISTOR	RS1/10S☐☐☐J
	R286-289	CHIP RESISTOR	RS1/10S☐☐☐J
	R317	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R318	CHIP RESISTOR	RS1/10S☐☐☐J
	R321-328	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R329, 330	CHIP RESISTOR	RS1/10S☐☐☐J
	R335	CHIP RESISTOR	RS1/10S☐☐☐J
	R336	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R337	CHIP RESISTOR	RS1/10S☐☐☐J
	R338	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R339	CHIP RESISTOR	RS1/10S☐☐☐J
	R340-344	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R345-352	CHIP RESISTOR	RS1/10S☐☐☐J
	R353	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R354-361	CHIP RESISTOR	RS1/10S☐☐☐J
	R362	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R363-366	CHIP RESISTOR	RS1/10S☐☐☐J
	R367-370	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R385-389	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R390-400	CHIP RESISTOR	RS1/10S☐☐☐J
	R401-411	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R412-416	CHIP RESISTOR	RS1/10S☐☐☐J
	R419	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R422	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R429	CHIP RESISTOR	RS1/10S☐☐☐J
	R430, 431	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R432	CHIP RESISTOR	RS1/10S☐☐☐J
	R445	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R449-454	CHIP RESISTOR	RS1/10S☐☐☐J
	R455-458	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R491, 492	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R494, 495	CHIP RESISTOR	RS1/10S☐☐☐J
	R496	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	VR201	VR	VRTB6VS223
	VR202, 203	VR	VRTB6VS472
	VR301-304	VR	ACP1004

OTHERS

Mark	No.	Description	Part No.
		ANTENNA TERMINAL 4-P	AKA1009
		FM F.E MODULE	AXQ1002
		AM. RF. TUNING BLOCK	AXX1011
	CN1	PIN JACK(2P)	AKB1171
	CN21	CONNECTOR(10P)	KPE10
	CN22	CONNECTOR(12P)	KPE12
	CN23	CONNECTOR(15P)	KPE15
	CN24	CONNECTOR(7P)	KPE7
	CN25	CONNECTOR(9P)	KPE9
	X201	CRYSTAL RESONATOR	ASS1042
	X202	CERAMIC RESONATOR	ATF1027
	X301	CERAMIC OSCILLATOR	ASS1022

⊙ DECK–1 ASSEMBLY (AWZ3212)

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC1001		RC4558DXP

CAPACITORS

Mark	No.	Description	Part No.
	C1001, 1002	CERAMIC CAPACITOR	CKCYB681K50
	C1003, 1004	CERAMIC CAPACITOR	CCCSL101J50
	C1005, 1006	AUDIO FILM CAPACITOR	CFTXA223J50
	C1007, 1008	ELECTR. CAPACITOR	CEAS4R7M50
	C1009, 1010	ELECTR. CAPACITOR	CEAS470M10

RESISTORS

Mark	No.	Description	Part No.
	R1001-1010	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	VR1001, 1002	VR	VRTM6H202

⊙ DECK–2 ASSEMBLY (AWZ3213)

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC1101		RC4558DXP
	Q1101, 1102	N-FET	2SK373
	Q1103	TRANSISTOR	XDC143ES
	Q1104	TRANSISTOR	2SA1515
	Q1105, 1106	TRANSISTOR	2SC3377
	Q1107, 1108	TRANSISTOR	2SC2458
	D1101-1106	DIODE	1SS252

COILS/TRANSFORMERS

Mark	No.	Description	Part No.
	L1101, 1102	INDUCTOR	LTA822J
	T1101	OSC TRANSFORMER	ATX-043

CAPACITORS

Mark	No.	Description	Part No.
	C1101, 1102	CERAMIC CAPACITOR	CCMSL100D50
	C1103, 1104	CERAMIC CAPACITOR	CKCYB681K50
	C1105, 1106	CERAMIC CAPACITOR	CCCSL101J50
	C1107, 1108	AUDIO FILM CAPACITOR	CFTXA223J50
	C1109, 1110	ELECTR. CAPACITOR	CEAS4R7M50
	C1111, 1112	ELECTR. CAPACITOR	CEAS470M10
	C1113, 1114	CERAMIC CAPACITOR	CKDYB681K50
	C1115, 1116	CERAMIC CAPACITOR	CCDSL271K500
	C1119	MYLOR FILM CAPACITOR	CQMA562K400
	C1120	ELECTR. CAPACITOR	CEAS4R7M50
	C1121	MYLOR FILM CAPACITOR	CQMA123K250
	C1122	MYLOR FILM CAPACITOR	CQMA153K50
	C1123, 1124	MYLOR FILM CAPACITOR	CQMA103K50
	C1125	CERAMIC CAPACITOR	CCDSL221J50
	C1127	CQPA (2000P/630V)	ACE1020
	C1128	CERAMIC CAPACITOR	CKDYB472K500
	C1129	CERAMIC CAPACITOR	CKDYB681K50

RESISTORS

Mark	No.	Description	Part No.
	R1101-1115	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R1116	CARBONFILM RESISTOR	RD1/4PM☐☐☐J
	R1117	CARBONFILM RESISTOR	RD1/2PM☐☐☐J
	R1118, 1119, 1121	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	VR1101, 1102	VR	VRTM6H202
	VR1103, 1104	VR	VRTM6H204

⊙ TRANS ASSEMBLY (AWZ3214)

There is no supply part in this assembly.

REGULATOR ASSEMBLY

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC704	REGULATOR IC	NJM7812FA

CAPACITORS

Mark	No.	Description	Part No.
	C747, 748	ELECTR. CAPACITOR	CEAS100M25

⊙ POWER ASSEMBLY (AWZ3235)

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC701	REGULATOR IC	NJM7805FA
	IC702	REGULATOR IC	NJM7905FA
	IC703	REGULATOR IC	UPC78M12AHF
	IC705	REGULATOR IC	NJM78M56FAS
	IC709	IC PROTECTOR	ICP-N38
	IC751	LOGIC IC	TC4066BP
	IC753		RC4558DXP
	IC771	IC PROTECTOR	ICP-N38
	IC801		PA0049
	IC802, 803		RC4558DXP
	IC805	GEQ IC	LA3607
	IC851	AUDIO IC	STK4142-2GP
	Q11	TRANSISTOR	2SA1048

Mark	No.	Description	Part No.
	Q12	TRANSISTOR	2SC2458
	Q21, 22	TRANSISTOR	2SC2458
	Q23	TRANSISTOR	XDA143ES
	Q701	TRANSISTOR	2SC3377
	Q702	TRANSISTOR	XDA124ES
	Q703	TRANSISTOR	XDC124ES
	Q706	TRANSISTOR	2SB560
	Q707	TRANSISTOR	2SC2603
	Q708	TRANSISTOR	XDA124ES
	Q709	TRANSISTOR	XDC124ES
	Q710	TRANSISTOR	2SA933S
	Q741	TRANSISTOR	2SA1515
	Q742	TRANSISTOR	XDC143ES
	Q743	TRANSISTOR	XDA143ES
	Q744	TRANSISTOR	XDC124ES
	Q751	TRANSISTOR	XDA143ES
	Q752	TRANSISTOR	XDC143ES
	Q753, 754	TRANSISTOR	2SC2458
	Q851-854	TRANSISTOR	2SC2458
	D11	DIODE	1SS252
	D701	DIODE	RBV402
	D702-709	DIODE	S5566
	D712	DIODE	S5566
	D714	DIODE	S5566
	D716	ZENER DIODE	RD30ESB
	D717	ZENER DIODE	RD7. 5ESB
	D718, 719	DIODE	1SS252
	D740	DIODE	1SS252
	D741	ZENER DIODE	RD6. 8ESB
	D742-744	DIODE	1SS252
	D745	ZENER DIODE	RD2. 7ESB
	D799	DIODE	1SS252
	D851, 852	ZENER DIODE	UZ-12BS
	D853	DIODE	1SS252

RELAYS

Mark	No.	Description	Part No.
	RY851	RELAY	ASR1005

COILS/TRANSFORMERS

Mark	No.	Description	Part No.
	L751, 752	INDUCTOR	LTA392J
	L851, 852	COIL	ATH-133

CAPACITORS

Mark	No.	Description	Part No.
	C11	ELECTR. CAPACITOR	CEAS100M50
	C701, 702	ELECTR. CAPACITOR	ACH1109
	C703, 704	ELECTR. CAPACITOR	CEAS222M16
	C705, 706	ELECTR. CAPACITOR	CEAS100M25
	C707	ELECTR. CAPACITOR	CEAS332M25
	C708, 709	ELECTR. CAPACITOR	CEAS100M25
	C716	CAPACITOR (CERAMIC)	ACG-009
	C718	ELECTR. CAPACITOR	CEAS101M50
	C720	ELECTR. CAPACITOR	CEAS220M100
	C723	ELECTR. CAPACITOR	CEAS470M50
	C724	ELECTR. CAPACITOR	CEAS100M50
	C730	ELECTR. CAPACITOR	CEAS101M16
	C731	ELECTR. CAPACITOR	CEAS470M10
	C732	ELECTR. CAPACITOR	CEAS331M10
	C733	ELECTR. CAPACITOR	CEAS470M50
	C741	ELECTR. CAPACITOR	CEAS2R2M50
	C742	ELECTR. CAPACITOR	CEAS4R7M50
	C753, 754	AUDIO FILM CAPACITOR	CFTXA683J50
	C755, 756	MYLOR FILM CAPACITOR	CQMA182J50
	C757, 758	ELECTR. CAPACITOR	CEAS330M16
	C759, 760	AUDIO FILM CAPACITOR	CFTXA273J50
	C761, 762	AUDIO FILM CAPACITOR	CFTXA473J50
	C765, 766	ELECTR. CAPACITOR	CEAS470M10
	C771	ELECTR. CAPACITOR	CEAS3R3M50
	C803, 804	CERAMIC CAPACITOR	CKDYB682K50
	C805, 806	MYLOR FILM CAPACITOR	CQMA102J50
	C807, 808	MYLOR FILM CAPACITOR	CQMA562J50
	C809	ELECTR. CAPACITOR	CEASR47M50
	C810	ELECTR. CAPACITOR	CEAS6R8M50
	C811	MYLOR FILM CAPACITOR	CQMA223J50
	C812	CERAMIC CAPACITOR	CKCYX104M25
	C819, 820	ELECTR. CAPACITOR	CEAS3R3M50
	C823	CERAMIC CAPACITOR	CKDYB561K50
	C824	CERAMIC CAPACITOR	CKDYB822K50
	C825	CERAMIC CAPACITOR	CKDYB561K50
	C826	CERAMIC CAPACITOR	CKDYB272K50
	C829	CERAMIC CAPACITOR	CKDYB272K50
	C830	CERAMIC CAPACITOR	CKDYX393M25
	C831	CERAMIC CAPACITOR	CKDYB472K50
	C832	CERAMIC CAPACITOR	CKDYX683M25
	C833	CERAMIC CAPACITOR	CKDYB102K50
	C834	CERAMIC CAPACITOR	CKDYX153M25
	C835	CERAMIC CAPACITOR	CKDYB182K50
	C836	CERAMIC CAPACITOR	CKDYX273M25
	C837	AUDIO FILM CAPACITOR	CFTXA474J50
	C851, 852	ELECTR. CAPACITOR	CEAS2R2M50
	C855, 856	ELECTR. CAPACITOR	CEAS470M25
	C857, 858	ELECTR. CAPACITOR	CEAS101M25
	C859	ELECTR. CAPACITOR	CEANP220M35
	C860	ELECTR. CAPACITOR	CEAS100M50
	C863	ELECTR. CAPACITOR	CEAS470M50
	C865-868	CERAMIC CAPACITOR	CKDYX104M25
	C869	CERAMIC CAPACITOR	CKDYF473Z50
	C870	ELECTR. CAPACITOR	CEAS220M25
	C873	ELECTR. CAPACITOR	CEAS221M10
	C874	CERAMIC CAPACITOR	CKCYF473Z50
	C875	ELECTR. CAPACITOR	CEAS470M35

RESISTORS

Mark	No.	Description	Part No.
	R1	METAL OXIDE RESISTOR	RS2LMF☐☐☐J
	R11, 12	METAL OXIDE RESISTOR	RS2LMF☐☐☐J
	R13-18	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R21-33	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R51	RESISTOR(2. 2M, 1/2W)	ACN-208
	R703, 704	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R705, 706	CARBONFILM RESISTOR	RD1/4PM☐☐☐J
	R714	CARBONFILM RESISTOR	RD1/2PM☐☐☐J
	R715	METAL OXIDE RESISTOR	RS2LMF☐☐☐J
	R716	CARBONFILM RESISTOR	RD1/4PM☐☐☐J
	R730-734	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R741-748	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R753-770	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R773	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R799	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R801-813	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R829, 830	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R851-858	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R859-862	CARBONFILM RESISTOR	RD1/4PM☐☐☐J
	R863	CARBONFILM RESISTOR	RD1/4PMFL☐☐☐J
	R864, 865	CARBONFILM RESISTOR	RD1/4PM☐☐☐J
	R866	CARBONFILM RESISTOR	RD1/4PMFL☐☐☐J
	R867	CARBONFILM RESISTOR	RD1/4PM☐☐☐J
	R868	CARBONFILM RESISTOR	RD1/4PMFL☐☐☐J
	R869, 870	CARBONFILM RESISTOR	RD1/4PM☐☐☐J
	R871, 872	METAL OXIDE RESISTOR	RS1LMF☐☐☐J
	R873, 874	CARBONFILM RESISTOR	RD1/4PMFL☐☐☐J
	R875-879	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R881	METAL OXIDE RESISTOR	RS2LMF☐☐☐J
	R882-884	CARBONFILM RESISTOR	RD1/8PM☐☐☐J

OTHERS

Mark	No.	Description	Part No.
		SPEAKER TERMINAL 4-P	AKE1012
		SOCKET 15-P	AKP-048
		SOCKET 14-P	AKP1056
	CN1	JACK	AKN1027
	CN10	CONNECTOR(3P)	KPE3
	CN11	CONNECTOR(5P)	KPE5
	CN12	CONNECTOR(13P)	KPE13
	CN16, 17	CONNECTOR(15P)	KPE15
	CN19	CONNECTOR(6P)	KPE6

⊙ AMP SW ASSEMBLY (AWZ3237)

SEMICONDUCTORS

Mark	No.	Description	Part No.
	D1305, 1306	LED(RED)	AEL1108

SWITCHES

Mark	No.	Description	Part No.
	S1301-1312	SWITCH	ASG1034

RESISTORS

Mark	No.	Description	Part No.
	R1301	CARBONFILM RESISTOR	RD1/8PM☐☐☐J

⊙ TX.CD SW ASSEMBLY (AWZ3238)

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC1201		PDG065B
	Q1201	TRANSISTOR	XDC143ES
	Q1202	TRANSISTOR	2SC2458
	D1212-1217	DIODE	1SS252
	D1218	ZENER DIODE	RD6. 2ESB

SWITCHES

Mark	No.	Description	Part No.
	S1201-1211	SWITCH	ASG1034
	S1221-1229	SWITCH	ASG1034

COILS/TRANSFORMERS

Mark	No.	Description	Part No.
	L1201	AXIAL INDUCTOR	LAU220K

CAPACITORS

Mark	No.	Description	Part No.
	C1201	CERAMIC CAPACITOR	CKDYX473M25
	C1202	ELECTR. CAPACITOR	CEJA010M50
	C1203	AUDIO FILM CAPACITOR	CFTXA224J50
	C1204	CERAMIC CAPACITOR	CKDYB102K50
	C1205	ELECTR. CAPACITOR	CEJA470M10
	C1206	CERAMIC CAPACITOR	CKDYF473Z50
	C1207	ELECTR. CAPACITOR	CEJA470M10
	C1208	CEA (47000/5. 5V)	ACH1037
	C1209	CERAMIC CAPACITOR	CKDYF223Z50
	C1210	ELECTR. CAPACITOR	CEJA4R7M35
	C1211	ELECTR. CAPACITOR	CEJA2R2M50

RESISTORS

Mark	No.	Description	Part No.
	R1201-1232	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R1235-1241	CARBONFILM RESISTOR	RD1/8PM☐☐☐J
	R1251-1257	CARBONFILM RESISTOR	RD1/8PM☐☐☐J

OTHERS

Mark	No.	Description	Part No.
		REMOTE RECEIVER UNIT	AXX1010
	V1201	FL TUBE	AAV1127
	X1202	CRYSTAL RESONATOR	ASS1015

⊙ MOTHER BOARD ASSEMBLY (PWM1375)

SEMICONDUCTORS

Mark	No.	Description	Part No.
⚠	IC2020	REGULATOR IC	M5298P
	IC2101	PRE AMP IC	CXA1471S
	IC2151	SERVO IC	CXA1372S
⚠	IC2201	POWER OP-AMP, IC	LA6520
⚠	IC2202	POWER OP-AMP, IC	LA6517
	IC2301	EFM DEMODULATION IC	CXD2500Q
	IC2351	MICROCOMPUTER, IC	PD4317A
	IC2401		TC9237N
	IC2404	OP-AMP IC	NJM4558D-D
	Q2062	TRANSISTOR	2SC1740S
	Q2101	TRANSISTOR	2SA854S
	Q2381, 2382	TRANSISTOR	2SC1740S
	Q2401	N-FET	2SK246
	D2211	ZENNER DIODE	MTZJ6. 2B
	D2301	DIODE	1SS254
	D2381-2383	DIODE	1SS254
	D2401	DIODE	1SS254
	D2701-2703	DIODE	1SS254

COILS/TRANSFORMERS

Mark	No.	Description	Part No.
	L2401	AXIAL INDUCTOR	LAU100K
	L2403, 2404	AXIAL INDUCTOR	LAU100K

CAPACITORS

Mark	No.	Description	Part No.
	C2025-2028	ELECTR. CAPACITOR	CEAS101M10
	C2060	ELECTR. CAPACITOR	CEAS010M50
	C2101	ELECTR. CAPACITOR	CEAS331M6R3
	C2102	ELECTR. CAPACITOR	CEAS101M10
	C2103	CERAMIC CAPACITOR	CCCCH180J50
	C2104	ELECTR. CAPACITOR	CEAS101M10
	C2110	CERAMIC CAPACITOR	CKCYF103Z50
	C2151	ELECTR. CAPACITOR	CEAS101M10

Mark	No.	Description	Part No.
	C2153	ELECTR. CAPACITOR	CEAS101M10
	C2155	MYLOR FILM CAPACITOR	CQMA182J50
	C2156	MYLOR FILM CAPACITOR	CQMA333K50
	C2157	MYLOR FILM CAPACITOR	CQMA103K50
	C2158, 2159	MYLOR FILM CAPACITOR	CQMA104K50
	C2160	ELECTR. CAPACITOR	CEAS4R7M50
	C2161	MYLOR FILM CAPACITOR	CQMA104K50
	C2162	ELECTR. CAPACITOR	CEAS010M50
	C2163	MYLOR FILM CAPACITOR	CQMA104K50
	C2164	MYLOR FILM CAPACITOR	CQMA103K50
	C2167	CERAMIC CAPACITOR	CKCYF103Z50
	C2168	MYLOR FILM CAPACITOR	CQMA333K50
	C2169	MYLOR FILM CAPACITOR	CQMA103K50
	C2170	MYLOR FILM CAPACITOR	CQMA332J50
	C2171, 2172	MYLOR FILM CAPACITOR	CQMA472J50
	C2202	CERAMIC CAPACITOR	CKCYF103Z50
	C2204	CERAMIC CAPACITOR	CKCYF103Z50
	C2212	MYLOR FILM CAPACITOR	CQMA103K50
	C2216, 2217	ELECTR. CAPACITOR	CEAS330M16
	C2301	MYLOR FILM CAPACITOR	CQMA104K50
	C2302	ELECTR. CAPACITOR	CEAS331M6R3
	C2303	ELECTR. CAPACITOR	CEAS330M16
	C2306	CERAMIC CAPACITOR	CKCYB152K50
	C2307	MYLOR FILM CAPACITOR	CQMA473J50
	C2308	MYLOR FILM CAPACITOR	CQMA103K50
	C2309	ELECTR. CAPACITOR	CEASR47M50
	C2351	ELECTR. CAPACITOR	CEAS471M6R3
	C2353	CERAMIC CAPACITOR	CKCYF103Z50
	C2361	CERAMIC CAPACITOR	CKCYF103Z50
	C2403, 2404	CERAMIC CAPACITOR	CCCCH470J50
	C2413	ELECTR. CAPACITOR	CEAS101M10
	C2414	MYLOR FILM CAPACITOR	CQMA103K50
	C2415, 2416	MYLOR FILM CAPACITOR	CQMA104K50
	C2421	CERAMIC CAPACITOR	CKCYF473Z50
	C2427, 2428	CERAMIC CAPACITOR	CCDSL101J50
	C2429, 2430	CERAMIC CAPACITOR	CCCCH560J50
	C2433, 2434	ELECTR. CAPACITOR	CEAS2R2M50
	C2435-2438	CERAMIC CAPACITOR	CCCCH390J50
	C2441, 2442	MYLOR FILM CAPACITOR	CQMA152J50

RESISTORS

Mark	No.	Description	Part No.
	R2061, 2062	CARBONFILM RESISTOR	RD1/6PM☐☐☐J
	R2101-2110	CARBONFILM RESISTOR	RD1/6PM☐☐☐J
	R2153-2158	CARBONFILM RESISTOR	RD1/6PM☐☐☐J
	R2160	CARBONFILM RESISTOR	RD1/6PM☐☐☐J
	R2201-2206	CARBONFILM RESISTOR	RD1/6PM☐☐☐J
	R2211, 2212	CARBONFILM RESISTOR	RD1/6PM☐☐☐J
	R2221-2224	CARBONFILM RESISTOR	RD1/6PM☐☐☐J
	R2301-2312	CARBONFILM RESISTOR	RD1/6PM☐☐☐J
	R2352-2355	CARBONFILM RESISTOR	RD1/6PM☐☐☐J
	R2368	CARBONFILM RESISTOR	RD1/6PM☐☐☐J
	R2375	CARBONFILM RESISTOR	RD1/6PM☐☐☐J
	R2378	CARBONFILM RESISTOR	RD1/6PM☐☐☐J
	R2381-2383	CARBONFILM RESISTOR	RD1/6PM☐☐☐J
	R2387-2390	CARBONFILM RESISTOR	RD1/6PM☐☐☐J

Mark	No.	Description	Part No.
	R2405	CARBONFILM RESISTOR	RD1/6PM☐☐☐J
	R2427-2430	CARBONFILM RESISTOR	RD1/6PM☐☐☐J
	R2435-2446	CARBONFILM RESISTOR	RD1/6PM☐☐☐J
	VR2102	VR	RCP1035
	VR2103	VR	RCP1027
	VR2151, 2152	VR	RCP1035

OTHERS

Mark	No.	Description	Part No.
	CN2001	CONNECTOR(7P)	KPE7
	CN2002	CONNECTOR(12P)	KPE12
	CN2101	CONNECTOR	52045-1610
	X2351	CERAMIC RESONATOR	VSS1014
	X2401	XTAL RES (OSC)	PSS1006

7. ADJUSTMENTS

7.1 TUNER SECTION

Preparations

- Set the VOLUME control to minimum.
- Set the input selector to TUNER.
- Refer to Fig. 7–3. for adjustment test points and controls.

FM tuner section adjustment

- Select the FM mode with the BAND selector switch.
- Connect as shown in Fig. 7–1.

Step	Adjustment name	FM SG (1 kHz ± 75 kHz dev.)		XR–P310 Reception frequency indication	Adjustment	
		Frequency (MHz)	Level (dB μ)		Adjusting point	Specification
1	Center meter adjustment	98	60	98 MHz	L202	Adjust so that the voltage of both side of R220 becomes 0V ± 50 mV.
2	FM VCO free–run frequency adjustment	98	60 (No modulation)	98 MHz	VR203	Adjust so that the frequency between TP MPX VCO and GND becomes 76±0.5 kHz.
3	Tuning indicator level adjustment	98	17	98 MHz	VR201	Adjust to the point where the tuning indicator just lights down.

AM tuner section adjustment

- AM SG level (dB μ/m) indicates the electric field strength of the loop antenna.
- Select the AM mode with the BAND selector switch.
- Connect as shown in Fig. 7–2.
- For the SD type only, set the CHANNEL STEP switch (S101) on the rear panel side to 9 kHz/50 kHz.

Step	Adjustment name	AM SG (400 Hz, 30% modulation)		XR–P310 Reception frequency indication	Adjustment	
		Frequency (kHz)	Level (dB μ /m)		Adjusting point	Specification
1	Tuning indicator level adjustment	999	55	999 kHz	VR202	Adjust to the point where the tuning indicator just lights down.

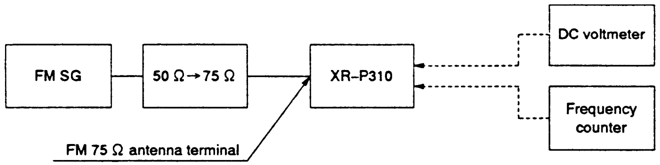

FM SG
50 Ω→75 Ω
XR–P310
DC voltmeter
Frequency counter
FM 75 Ω antenna terminal

Fig. 7–1 FM Adjustment Connection Diagram

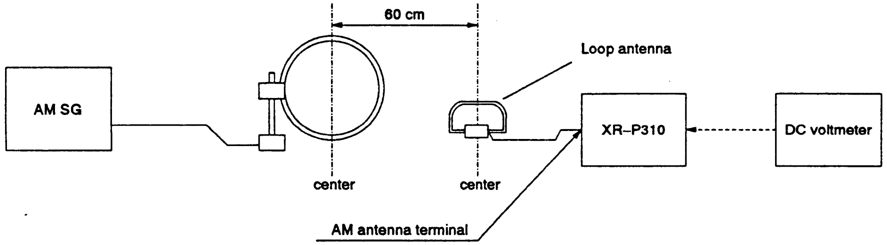

60 cm
Loop antenna
AM SG
XR–P310
DC voltmeter
center
center
AM antenna terminal

Fig. 7–2 AM Adjustment Connection Diagram

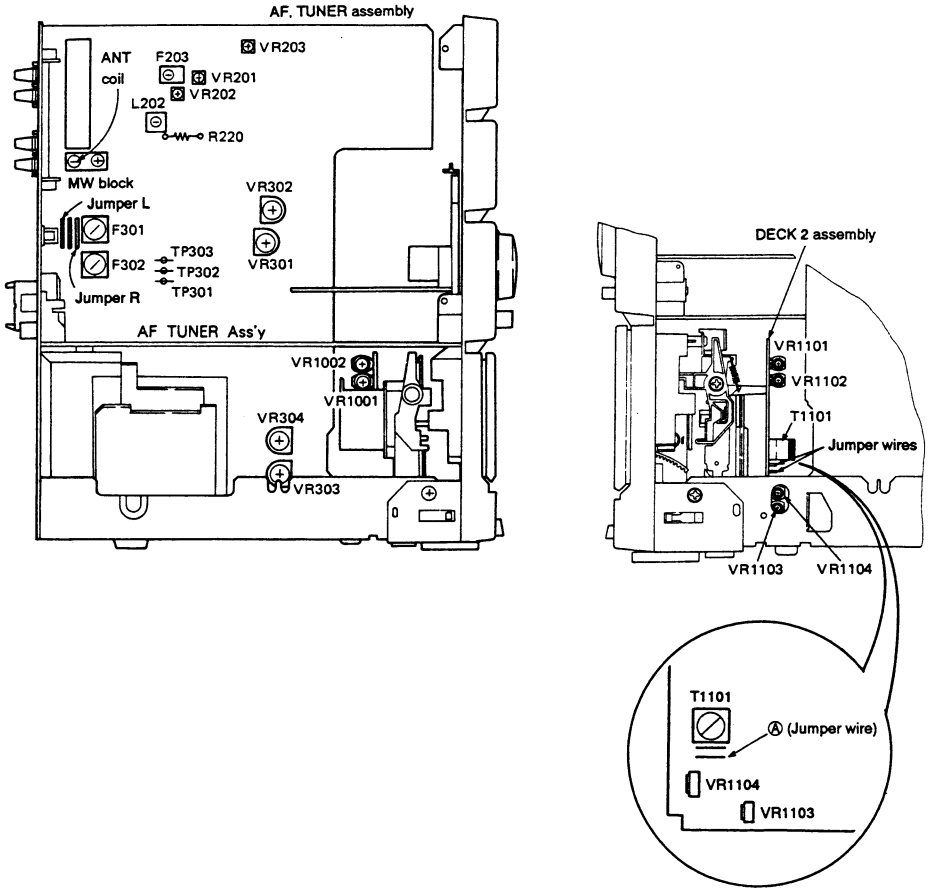

AF, TUNER assembly
VR203
ANT coil
F203
VR201
VR202
L202
R220
MW block
VR302
Jumper L
F301
F302
TP303
TP302
TP301
VR301
Jumper R
AF TUNER Ass'y
VR1002
VR1001
VR304
VR303
DECK 2 assembly
VR1101
VR1102
T1101
Jumper wires
VR1103
VR1104
T1101
Ⓐ (Jumper wire)
VR1104
VR1103

Fig. 7–3 Adjustment Points and Test Points

7.2 TAPE DECK SECTION

- Adjustment points and test points are shown in Fig. 7–3.

● Mechanical Adjustment

- Set the TAPE function.
- Test tape: STD–301 (3 kHz, 30 min.)

1. Tape Speed Adjustment

No.	Mode	Test tape	Adjusting points		Measurement points	Adjustment procedure	Remarks
1	PLAY	STD–301 (playback 3 kHz)	Deck I	AF, TUNER Assembly VR304	TP303 (Rch)	Press the PLAY SW and adjust so that the reading becomes 3010 ± 10 Hz. Confirm that wow & flutter level is below 0.2% (in the reverse direction, confirm that the reading is within 3010 ± 55 Hz).	
2	PLAY		Deck II	AF, TUNER Assembly VR303	TP303 (Rch)	Press the PLAY SW and adjust so that the reading becomes 3010 ± 10 Hz. Confirm that wow & flutter level is below 0.2% (in the reverse direction, confirm that the reading is within 3010 ± 55 Hz).	

● Electrical Adjustment

Check the following before starting.

1. Confirm that tape speed adjustment has been completed.
2. Clean the heads and demagnetize them using a head eraser.
3. Set the measurement level to 0 dBV=1 Vrms.
4. Use the specified tape for adjustment. Use the labeled (A) side of the test tape.
   STD–331B: for playback adjustment
   STD–630: normal blank tape
5. Provide yourself with the following measuring devices:
   AC millivoltmeter, low–frequency oscillator, attenuator, oscilloscope
6. Adjust both right and left channels unless otherwise specified.
7. Turn the DOLBY NR switch off unless otherwise specified.
8. Warm up the unit for several minutes before adjustment. In particular, be sure to warm up the unit in the REC/PLAY mode for 3 to 5 minutes before starting recording/playback frequency characteristics adjustment.
9. Always follow the indicated adjustment order. Otherwise, a complete adjustment may not be achieved.

Playback Adjustment (decks I, II)

1. Head angle adjustment
2. Playback level adjustment

Recording Adjustment (deck II)

1. Bias oscillation frequency check
2. Recording/playback frequency characteristics adjustment
3. Recording level adjustment
4. ALC operation check

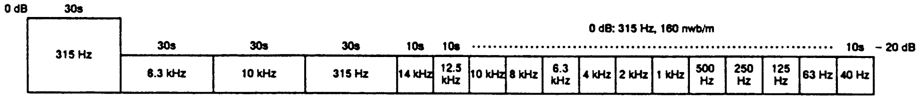


Fig. 7–4 STD–331B Test Tape

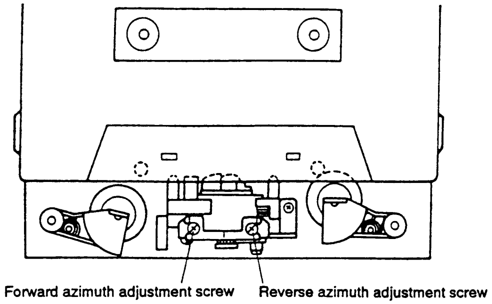

Forward azimuth adjustment screw
Reverse azimuth adjustment screw

Fig. 7–5 Head Angle Adjustment

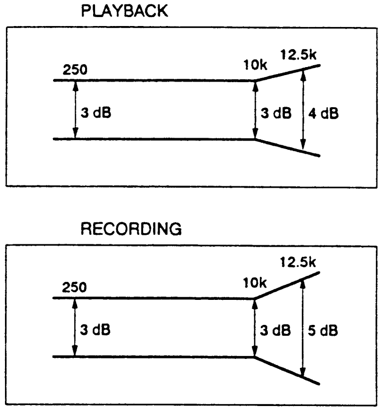


Fig. 7–6 Frequency Characteristics

● Playback Adjustment

- This unit is equipped with auto tape selector.
- Do not switch between forward and reverse operation with the screwdriver inserted.

1. Head Angle Adjustment

Step	Tape selector (AUTO)	Mode	Input signal/ test tape	Adjusting points		Measurement points	Adjustment value	Remarks
1	NORMAL	PLAY	STD–331B test tape (playback 10 kHz, –20 dB)	Deck I Deck II	Head angle adjustment screw (Fig. 7–4)	TP301 (Lch) TP303 (Rch) (DOLBY TP)	Max. playback signal level	After adjustment, apply lock paint to the head angle adjustment screw.

2. Playback Level Adjustment

- Since this adjustment determines playback Dolby NR level, perform it carefully.

Step	Tape selector (AUTO)	Mode	Input signal/ test tape	Adjusting points		Measurement points	Adjustment value	Remarks
1	NORMAL	PLAY	STD–331B test tape (playback 315 kHz, 0 dB)	Deck I	VR1001 (Lch) VR1002 (Rch)	TP301 (Lch) TP303 (Rch) (DOLBY TP)	–5.2 dBV	
				Deck II	VR1101 (Lch) VR1102 (Rch)			

Note: Deck II level also changes when deck I level is adjusted.
Therefore, adjust deck I level first.

● Recording Adjustment

1. Bias Oscillation Frequency Check

Step	Tape selector (AUTO)	Mode	Input signal/ test tape	Adjusting points		Measurement points	Adjustment value	Remarks
1	NORMAL	REC	Load the STD–630 test tape and set the recording mode.	Deck I			Oscillation frequency to be 106.5 ± 2 kHz with the rear panel beat–cut switch in the "1" position.	Frequency is 2 to 3 kHz lower with the rear panel beat–cut switch in the "2" position.
				Deck II	—	Between the Ⓐ point in Fig. 7–3 and GND		

2. Recording/Playback Frequency Characteristics Adjustment

• Since this adjustment affects recording bias, prevent distortion from increasing due to underbias.

Step	Tape selector (AUTO)	Mode	Input signal/ test tape	Adjusting points		Measurement points	Adjustment value	Remarks
1	NORMAL	REC	Input a 315 Hz signal to the VIDEO AUDIO IN terminal and set the input selector to VIDEO.	Deck I		TP301 (Lch) TP303 (Rch) (DOLBY TP)	–25.2 dBV	
				Deck II	Input signal level			
2	NORMAL	REC/ PLAY	Load the STD–630 test tape and record/ playback the 315 Hz and 10 kHz signals (see the Note below).	Deck I		TP301 (Lch) TP303 (Rch) (DOLBY TP)	Repeat adjustment until playback level of the 10 kHz signal is within 0 ± 0.5 dB from that of the 315 Hz signal.	
				Deck II	VR1103 (Lch) VR1104 (Rch)			

Note: Set to the same level used for the 315 Hz input signal at step 1.

3. Recording Level Adjustment

Step	Tape selector (AUTO)	Mode	Input signal/ test tape	Adjusting points		Measurement points	Adjustment value	Remarks
1	NORMAL	REC	Input a 315 Hz signal to the VIDEO AUDIO IN terminal and set the input selector to VIDEO.	Deck I	Input signal level	TP301 (Lch) TP303 (Rch) (DOLBY TP)	–5.2 dBV	
				Deck II				
2	NORMAL	REC/ PLAY	STD–630 test tape and record/playback the 315 Hz signal.	Deck I		TP301 (Lch) TP303 (Rch) (DOLBY TP)	Repeat recording, playback and adjustment until playback level of the 315 kHz signal becomes –5.2 dBV.	
				Deck II	VR301 (Lch) VR302 (Rch)			

4. ALC Operation Check

Step	Tape selector (AUTO)	Mode	Input signal/ test tape	Adjusting points	Measurement points	Adjustment value	Remarks
1	NORMAL	REC• PAUSE	Input a 315 Hz signal to the VIDEO AUDIO IN terminal and set the input selector to VIDEO.	Input signal level	TP301 (Lch) TP303 (Rch) (DOLBY TP)	–5.2 dBV	
2				Set to a level +10 dB above the input level at step 1.		–1.2 ± 2.5 dBV	

7.3 CD PLAYER SECTION

Adjustment Methods

If a disc player is adjusted incorrectly or inadequately, it may malfunction or not work at all even though there is nothing at all wrong with the pickup or the circuitry. Adjust correctly following the adjustment procedure.

● Adjustment items/verification items and order

Step	Item	Test point	Adjustment location
1	Focus offset adjustment	TP1, Pin 6 (FCS. ERR)	VR2103 (FCS. OFS)
2	Grating adjustment	TP1, Pin 2 (TRK. ERR)	Grating adjustment slit
3	Tracking error balance adjustment	TP1, Pin 2 (TRK. ERR)	VR2102 (TRK. BAL)
4	Pickup radial/ tangential direction tilt adjustment	TP1, Pin 1 (RF)	Radial tilt adjustment screw, Tangential tilt adjustment screw
5	RF level adjustment	TP1, Pin 1 (RF)	VR1 (RF level)
6	Focus servo loop gain adjustment	TP1, Pin 5 (FCS. IN) TP1, Pin 6 (FCS. ERR)	VR2152 (FCS. GAN)
7	Tracking servo loop gain adjustment	TP1, Pin 3 (TRK. IN) TP1, Pin 2 (TRK. ERR)	VR2151 (TRK. GAN)
8	Focus error signal verification	TP1, Pin 6 (FCS. ERR)	———

[Abbreviation table]

FCS. ERR : Focus Error
FCS. OFS : Focus Offset
TRK. ERR : Tracking Error
TRK. BAL : Tracking Balance
FCS. IN : Focus In
TRK. IN : Tracking In

● Measuring instruments and tools

1. Dual trace oscilloscope (10:1 probe)
2. Low-frequency oscillator
3. Test disc (YEDS-7)
4. 12-cm disc (with at least about 70 minutes of recording)
5. Low-pass filter (39 kΩ + 0.001 µF)
6. Resistor (100 kΩ)
7. Hexagonal wrench (M3 mm)
8. Standard tools

● Test point and adjustment variable resistor positions

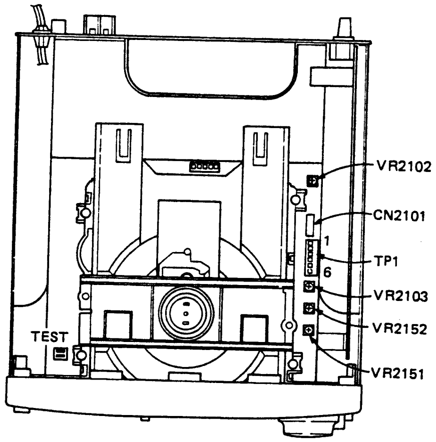


Fig. 7–7 Adjustment Locations

● Notes

1. Use a 10:1 probe for the oscilloscope.
2. All the knob positions (settings) for the oscilloscope in the adjustment procedures are for when a 10:1 probe is used.

● Test mode

These models have a test mode so that the adjustments and checks required for service can be carried out easily. When these models are in test mode, the keys on the front panel work differently from normal. Adjustments and checks can be carried out by operating these keys with the correct procedure. For these models, all adjustments are carried out in test mode.

[Setting these models to test mode]

How to set this model into test mode.
1. Turn off the power switch.
2. Short the test mode jumper wires. (See Fig. 7–7.)
3. Turn on the power switch.

When the test mode is set correctly, the display is different from what it usually is when the power is turned on. If the display is still the same as usual, test mode has not been set correctly, so repeat Steps 1-3.

[Release from test mode]

Here is the procedure for releasing the test mode:
1. Press the STOP key and stop all operations.
2. Turn off the power switch on the front panel.

[Operations of the keys in test mode]

Code	Key name	Function in test mode	Explanation
	PROGRAM	Focus servo close	The laser diode is lit up and the focus actuator is lowered, then raised slowly and the focus servo is closed at the point where the objective lens is focused on the disc. With the player in this state, if you lightly rotate the stopped disc by hand, you can hear the sound the focus servo. If you can hear this sound, the focus servo is operating correctly. If you press this key with no disc mounted, the laser diode lights up, the focus actuator is pulled down, then the actuator is raised and lowered twice and returned to its original position.
▶	PLAY	Spindle servo ON	Starts the spindle motor in the clockwise direction and when the disc rotation reaches the prescribed speed (about 500 rpm at the inner periphery), sets the spindle servo in a closed loop. Be careful. Pressing this key when there is no disc mounted makes the spindle motor run at the maximum speed. If the focus servo does not go correctly into a closed loop or the laser light shines on the mirror section at the outermost periphery of the disc, the same symptom is occurred.
❚❚	PAUSE	Tracking servo close/open	Pressing this key when the focus servo and spindle servo are operating correctly in closed loops puts the tracking servo into a closed loop, displays the track number being played back and the elapsed time on the front panel, and outputs the playback signal. If the elapsed time is not displayed or not counted correctly or the audio is not played back correctly, it may be that the laser is shining on the section with no sound recorded at the outer edge of the disc, that something is out of adjustment, or that there is some other problem. This key is a toggle key and open/close the tracking servo alternately. This key has no effect if no disc is mounted.
⏮/ ◀◀	TRACK/ MANUAL SEARCH REV	Carriage reverse (inwards)	Moves the pickup position toward the inner periphery of the disc. When this key is pressed with the tracking servo in a closed loop, the tracking servo automatically goes into an open loop. Since the pickup does not automatically stop at the mechanical end point in test mode, be careful with this operation.
▶▶/ ⏭	TRACK/ MANUAL SEARCH FWD	Carriage forward (outwards)	Moves the pickup position toward the outer periphery of the disc. When this key is pressed with the tracking servo in a closed loop, the tracking servo automatically goes into an open loop. Since the pickup does not automatically stop at the mechanical end point in test mode, be careful with this operation.
■	STOP	Stop	Switches off all the servos and initializes. The pickup remains where it was when this key was pressed.
▲	OPEN/CLOSE	Disc tray open/close	Opens/closes the disc tray. This key is a toggle key and open/close tray alternately. Pressing this key when the disc is turning stops the disc, then opens the tray. This key operation does not affect the position of the pickup.

[How to play back a disc in test mode]

In test mode, since the servos operate independently, playing back a disc requires that you operate the keys in the correct order to close the servos.
Here is the key operation sequence for playing back a disc in test mode.

PROGRAM	Lights up the laser diode and closes the focus servo.
⇓	
PLAY ▶	Starts the spindle motor and closes the spindle servo.
⇓	
PAUSE ▮▮	Closes the tracking servo.

Wait at least 2-3 seconds between each of these operations.

1. Focus offset adjustment

● Objective	Sets the DC offset for the focus error amp.		
● Symptom when out of adjustment	The player does not focus in and the RF signal is dirty.		
● Measurement instrument connections	Connect the oscilloscope to TP1, Pin 6 (FCS ERR). [Settings] 5 mV/division 10 ms/division DC mode	● Player state	Test mode, stopped (just the Power switch on)
		● Adjustment location	VR2103 (FCS OFS)
		● Disc	None needed

[Procedure]

Adjust VR2103 (FCS OFS) so that the DC voltage at TP1, Pin 6 (FCS ERR) is –50 ± 50 mV.

2. Grating adjustment

● Objective	To align the tracking error generation laser beam spots to the optimum angle on the track		
● Symptom when out of adjustment	Play does not start, track search is impossible, tracks are skipped.		
● Measurement instrument connections	Connect the oscilloscope to TP1, Pin 2 (TRK ERR) via a low pass filter. (See Fig. 7–8) [Settings] 50 mV/division 5 ms/division DC mode	● Player state	Test mode, focus and spindle servos closed and tracking servo open
		● Adjustment location	Pickup grating adjustment slit
		● Disc	12 cm disc. (YEDS-7 can not be used.)

[Procedure]

1. Move the pickup to the outer edge of the disc with the TRACK/MANUAL SEARCH FWD ▶▶/▶▶| or |◀◀/◀◀ key so that the grating adjustment slit is at the outer edge of the disc where it can be adjusted.
2. Press the PROGRAM key, then the PLAY ▶ key in that order to close the focus servo then the spindle servo.
3. Insert an ordinary screwdriver into the grating adjustment slit and adjust the grating to find the null point. For more details, see the next page.
4. If you slowly turn the screwdriver counterclockwise from the null point, the amplitude of the wave gradually increases, then if you continue turning the screwdriver, the amplitude of the wave becomes smaller again. Turn the screwdriver counterclockwise from the null point and set the grating to the first point where the wave amplitude reaches its maximum.

   Reference: Fig. 7–9 shows the relation between the angle of the tracking beam with the track and the wave form.

   Note: The amplitude of the tracking error signal is about 3 Vp-p (when a 39 kΩ + 0.001 μF low pass filter is used). If this amplitude is extremely small (2 Vp-p or less), the objective lens or the pickup malfunction may be the case. If the difference between the amplitude of the error signal at the innermost edge and outermost edge of the disc is more than 10%, the grating is not adjusted to the optimum point, so adjust it again.

5. Return the pickup to more or less midway across the disc with the TRACK/MANUAL SEARCH REV |◀◀/◀◀ key, press the PAUSE ▮▮ key and check that the track number and elapsed time are displayed on the front panel. If they are not displayed at this time or the elapsed time changes irregularly, check the null point and adjust the grating again.

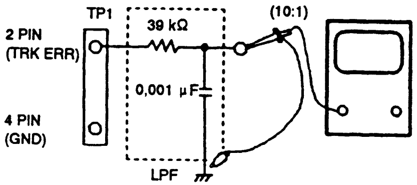
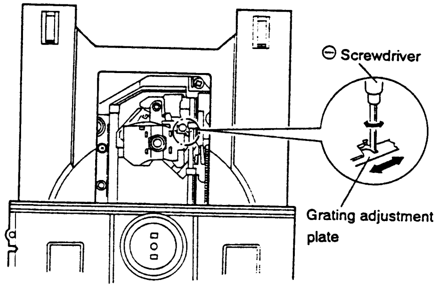


Fig. 7–8



Adjustment Locations

[How to find the null point]

When you insert the regular screwdriver into the slit for the grating adjustment and change the grating angle, the amplitude of the tracking error signal at TP1 Pin 2 changes. Within the range for the grating, there are five or six locations where the amplitude of the wave reaches a minimum. Of these five or six locations, there is only one at which the envelope of the wave form is smooth. This location is where the three laser beams divided by the grating are all right above the same track. (See Fig. 7–9.)
This point is called the null point. When adjusting the grating, this null point is found and used as the reference position.

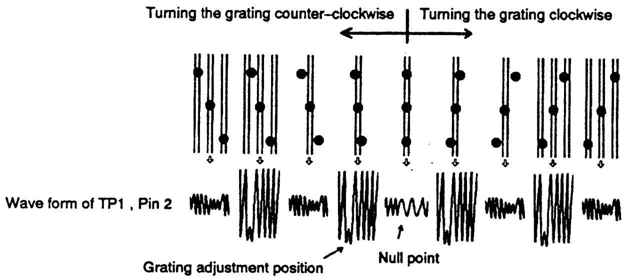
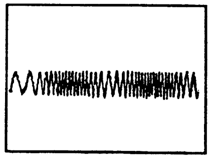
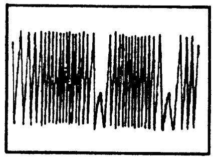

Turning the grating counter-clockwise
Turning the grating clockwise
Wave form of TP1 , Pin 2
Grating adjustment position
Null point

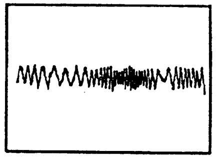
Fig. 7–9



Nullo point waveform



Maximum amplitude waveform



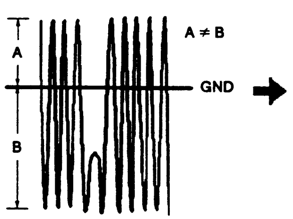
Waveform other than the null point

3. Tracking error balance adjustment

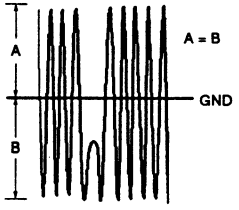
● Objective	To correct for the variation in the sensitivity of the tracking photodiode		
● Symptom when out of adjustment	Play does not start or track search is impossible		
● Measurement instrument connections	Connect the oscilloscope to TP1, Pin 2 (TRK ERR). This connection may be via a low pass filter.	● Player state	Test mode, focus and spindle servos closed and tracking servo open
	[Settings] 50 mV/division 5 ms/division DC mode	● Adjustment location	VR2102 (TRK BAL)
		● Disc	YEDS-7

[Procedure]

1. Move the pickup to midway across the disc (R = 35 mm) with the TRACK/MANUAL SEARCH FWD ▶▶ / ▶▶| or |◀◀ / ◀◀ key.
2. Press the PROGRAM key, then the PLAY ▶ key in that order to close the focus servo then the spindle servo.
3. Line up the bright line (ground) at the center of the oscilloscope screen and put the oscilloscope into DC mode.
4. Adjust VR2102 (TRK BAL) so that positive amplitude and negative amplitude of the tracking error signal at TP1 Pin 2 (TRK ERR) are the same (in other words, so that there is no DC component).



When there is a DC component



When there is no DC component

4. Pickup radial/tangential tilt adjustment

● Objective	To adjust the angle of the pickup relative to the disc so that the laser beams are shone straight down into the disc for the best read out of the RF signals.		
● Symptom when out of adjustment	Sound broken; some discs can be played but not others.		
● Measurement instrument connections	Connect the oscilloscope to TP1, Pin 1 (RF).	● Player state	Test mode, play
	[Settings] 20 mV/division 200 ns/division AC mode	● Adjustment location	Pickup radial tilt adjustment screw and tangential tilt adjustment screw
		● Disc	12 cm disc. (YEDS-7 can not be used.)

[Procedure]

1. Move the pickup to the outer edge of the disc with the TRACK/MANUAL SEARCH FWD ▶▶ / ▶▶| or |◀◀ / ◀◀ key so that the radial/tangential tilt screws can be adjusted.
   Press the PROGRAM key, the PLAY ▶ key, then the PAUSE ❚❚ key in that order to close the focus servo then the spindle servo and put the player into play mode.
2. First, adjust the radial tilt adjustment screw with an M3 mm hexagonal wrench so that the eye pattern (the diamond shape at the center of the RF signal) can be seen the most clearly.
3. Next, adjust the tangential tilt adjustment screw with an M3 mm hexagonal wrench so that the eye pattern (the diamond shape at the center of the RF signal) can be seen the most clearly (Fig. 7–11).
4. Adjust the radial tilt adjustment screw and the tangential tilt adjustment screw again so that the eye pattern can be seen the most clearly. As necessary, adjust the two screws alternately so that the eye pattern can be seen the most clearly.

   Note: Radial and tangential mean the directions relative to the disc shown in Fig. 7–10.

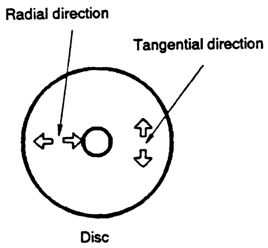
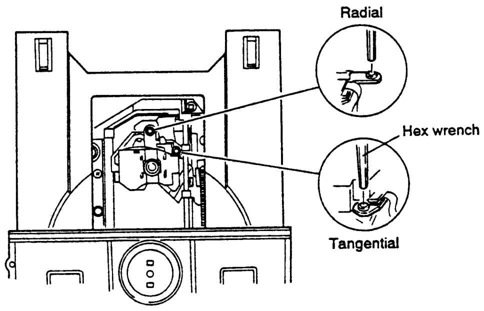


Fig. 7–10



Adjustment Locations

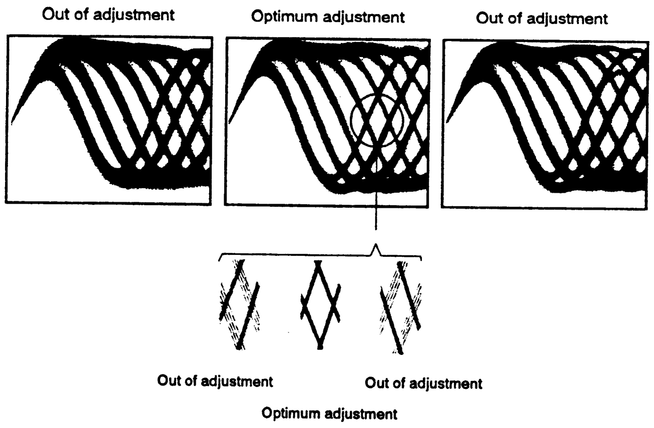

Out of adjustment
Optimum adjustment
Out of adjustment
Out of adjustment
Out of adjustment
Optimum adjustment

Fig. 7–11 Eye Pattern

5. RF level adjustment

● Objective	To optimize the playback RF signal amplitude		
● Symptom when out of adjustment	No play or no search		
● Measurement instrument connections	Connect the oscilloscope to TP1, Pin 1 (RF). [Settings] 50 mV/division 10 ms/division AC mode	● Player state ● Adjustment location ● Disc	Test mode, play VR1 (laser power) YEDS-7

[Procedure]

1. Move the pickup to midway across the disc (R = 35 mm) with the TRACK/MANUAL SEARCH FWD ▶▶/▶▶| or |◀◀/◀◀ key, then press the PROGRAM key, then the PLAY ▶ key in that order to close the respective servos and put the player into play mode.
2. Adjust VR1 (laser power) so that the RF signal amplitude is 1.2 Vp-p ± 0.1V.

6. Focus servo loop gain adjustment

● Objective	To optimize the focus servo loop gain		
● Symptom when out of adjustment	Playback does not start or focus actuator noisy		
● Measurement instrument connections	See Fig. 7–12. [Settings] CH1 20 mV/division CH2 5 mV/division X-Y mode	● Player state	Test mode, play
		● Adjustment location	VR2152 (FCS GAN)
		● Disc	YEDS-7

[Procedure]

1. Set the AF generator output to 1.2 kHz and 1 Vp-p.
2. Press the TRACK/MANUAL SEARCH FWD ▶▶/▶▶| or |◀◀/◀◀ key to move the pickup to halfway across the disc (R = 35 mm), then press the PROGRAM key, the PLAY ▶ key, then the PAUSE ▮▮ key in that order to close the corresponding servos and put the player into play mode.
3. Adjust VR2152 (FCS GAN) so that the Lissajous wave form is symmetrical about the X axis and the Y axis.

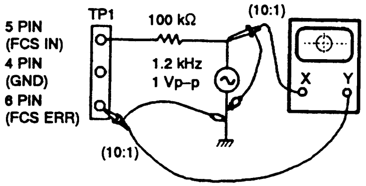
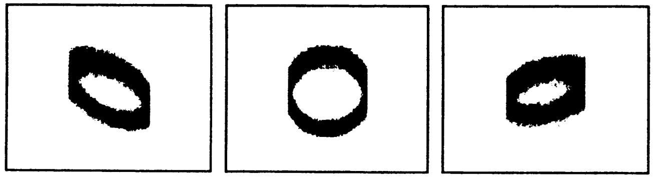


Fig. 7–12

Focus Gain Adjustment



Higher gain Optimum gain Lower gain

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7. Tracking servo loop gain adjustment

● Objective	To optimize the tracking servo loop gain		
● Symptom when out of adjustment	Playback does not start, during searches the actuator is noisy, or tracks are skipped.		
● Measurement instrument connections	See Fig. 7–13. [Settings] CH1 50 mV/division CH2 50 mV/division X-Y mode	● Player state	Test mode, play
		● Adjustment location	VR2151 (TRK GAN)
		● Disc	YEDS-7

[Procedure]

1. Set the AF generator output to 1.2 kHz and 2 Vp-p.
2. Press the TRACK/MANUAL SEARCH FWD ▶▶/▶▶| or |◀◀/◀◀ key to move the pickup to halfway across the disc (R = 35 mm), then press the PROGRAM key, the PLAY ▶ key, then the PAUSE ▮▮ key in that order to close the corresponding servos and put the player into play mode.
3. Adjust VR2151 (TRK GAN) so that the Lissajous wave form is symmetrical about the X axis and the Y axis.

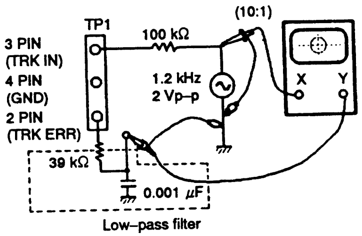
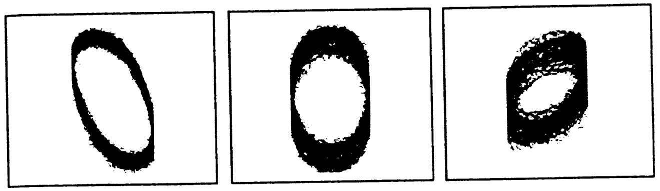


Fig. 7–13

Tracking Gain Adjustment



Higher gain Optimum gain Lower gain

8. Focus error signal (focus S curve) verification

● Objective ● Symptom when out of adjustment	To judge whether the pickup is ok or not by observing the focus error signal. The pickup is judged from the amplitude of the tracking error signal (as discussed in the section on adjusting the tracking error balance) and the wave form for the focus error signal.		
● Measurement instrument connections	Connect the oscilloscope to TP1, Pin 6 (FCS ERR). [Settings] 100 mV/division 5 ms/division DC mode	● Player state ● Adjustment location ● Disc	Test mode, stop None YEDS-7

[Procedure]

1. Connect TP1 Pin 5 to ground.
2. Mount the disc.
3. While watching the oscilloscope screen, press the PROGRAM key and observe the wave form in Fig. 7–14 for a moment. Verify that the amplitude is at least 2.5 Vp-p and that the positive and negative amplitude are about equal. Since the wave form is only output for a moment when the PROGRAM key is pressed, press this key over and over until you have checked the wave form.

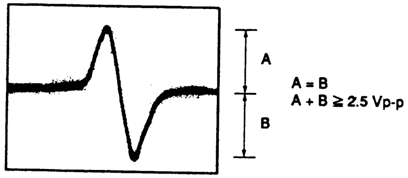


Fig. 7–14

[Judging the pickup]

Do not judge the pickup until all the adjustments have been made correctly. In the following cases, there may be something wrong with the pickup.

1. The tracking error signal amplitude is extremely small (less than 2 Vp-p).
2. The focus error signal amplitude is extremely small (less than 2.5 Vp-p).
3. The positive and negative amplitudes of the focus error signal are extremely asymmetrical (2:1 ratio or more).
4. The RF signal is too small (less than 0.8 Vp-p) and even if VR1 is adjusted (laser power), the RF signal can not be brought up to the standard level.

8. IC INFORMATION

8.1 PDG065B (TIMER/TUNER CONTROL MICROPROCESSOR)

PIN NO.	Name	I/O	Function	Logic
1	DUAL*	I	Tuner TV dual mode	Dual: "L"
2	STEREO	I	Tuner TV/FM receiving condition	STEREO: "L"
3	TUNE	I	Tuner receiving condition	TUNE: "L"
4	RESET	O	Reset output for PD5147A	RESET: "L"
5	LOCAL	O	Tuner TV/FM sensitivity selection	LOCAL: "L"
6	TX MUTE	O	Tuner mute request	MUTE: "H"
7	DISP REQ	I	CD Display data output request	REQ: "L"
8	DISP CLK	I	Clock for CD display data	"L" ACTIVE
9	DISP DATA	I	Data for CD display data	"L" ACTIVE
10	FM MONO/ AM NR	O	Tuner FM forcibly monaural/AM noise reduction	Forcibly monaural: "H" AM NR: "H"
11	PLL CLK	O	Clock for tuner PLL	"L" ACTIVE
12	PLL DATA	O	Data for tuner PLL	"L" ACTIVE
13	PLL CE	O	Tuner PLL chip enable	"L" ACTIVE
14	S.CLK	I	Clock input for system bus	"L" ACTIVE
15	S.DATA	I/O	Data input/output for system bus	"L" ACTIVE
16	TX REQ/EN	I/O	System bus request/enable	"L" ACTIVE
17	DISCO	O	SFC "DISCO" LED drive	LED ON: "H"
18	HALL	O	SFC "HALL" LED drive	LED ON: "H"
19	B.G.M.	O	SFC "B.G.M" LED drive	LED ON: "H"
20	PRESET	O	SFC "PRESET" LED drive	LED ON: "L"
21	MANUAL	O	SFC "MANUAL" LED drive	LED ON: "L"
22	KI0	I	Key matrix input	
23	KI1	I	Key matrix input	
24	KI2	I	Key matrix input	
25	KI3	I	Key matrix input	
26	KI4	I	Key matrix input	
27	KI5	I	Key matrix input	
28	KI6	I	Key matrix input	
29	KI7	I	Key matrix input	
30	$\overline{\text{RESET}}$	I	Reset input	RESET: "L"
31	EXTAL		8 MHz Ceramic oscillator (ASS1015-A) input	
32	XTAL			
33	Vss		GND	
34	P12	O	Segment data output for FL	
35	P13	O	Segment data output for FL	
36	P14	O	Segment data output for FL	
37	P15	O	Segment data output for FL	
38	P9	O	Segment data output for FL	
39	P10	O	Segment data output for FL	
40	P14	O	Segment data output for FL	

PIN NO.	Name	I/O	Function	Logic
41	P8	O	Segment data output for FL	
42	P7	O	Segment data output for FL	
43	P6	O	Segment data output for FL	
44	P2	O	Segment data output for FL	
45	P1	O	Segment data output for FL	
46	P3	O	Segment data output for FL	
47	P5	O	Segment data output for FL	
48	P4	O	Segment data output for FL	
49			Not used	
50			Not used	
51			Not used	
52			Not used	
53			Not used	
54			Not used	
55			Not used	
56			Not used	
57			Not used	
58			Not used	
59			Not used	
60	1G	O	Timing output for FL	
61	2G	O	Timing output for FL	
62	3G	O	Timing output for FL	
63	4G	O	Timing output for FL	
64	5G	O	Timing output for FL	
65	6G	O	Timing output for FL	
66	7G	O	Timing output for FL	
67	8G	O	Timing output for FL	
68	9G	O	Timing output for FL	
69	10G	O	Timing output for FL	
70	11G	O	Timing output for FL	
71	V_{FDP}		Offset voltage for FL (–27V)	
72	V_{DD}		Power (+5V)	
73				
74				
75	KO0	O	Key matrix, key scan output	
76	KO1	O	Key matrix, key scan output	
77	KO2	O	Key matrix, key scan output	
78	50/60 IN	I	AC 50/60 Hz pulse input	
79	TYPE 2*	I	Destination selection	
80	TYPE 1*	I	Destination selection	

*

Pin terminal / Destination	TYPE 1 (80 Pin)	TYPE 2 (79 Pin)
J	L	L
EX LW existed	L	H
EX LW not existed	H	H

1. DUAL becomes 9K/10K selection in EX model. 10K: "L"

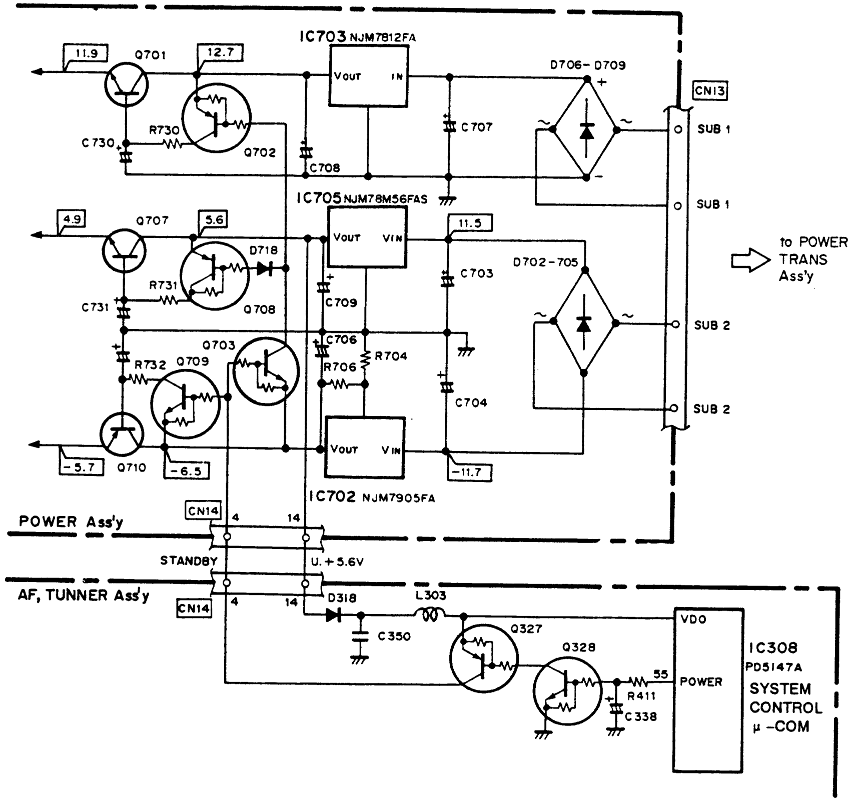
8.2 PD5147B (SYSTEM CONTROL MICROPROCESSOR)

PIN NO.	Name	I/O	Function	Logic
1	V_{cc}		Power (+5V)	
2	V_{REF}		A/D converter reference input	
3	VOLUME	I	Position detection input	
4	VOL UP	O	Volume up control	
5	VOL DOWN	O	Volume down control	
6	MUTE	O	Line mute control	MUTE ON: "H"
7	4052 INH	O	Function selection IC (MC14052BCP) control	
8	4052 B	O		
9	4052 A	O		
10	TX MUTE	I	Tuner mute request	MUTE: "H"
11			Not used	
12	FADER CONT	O	Fader circuit control	
13	REC CrO_2	O	REC EQ selection	CrO_2: "H"
14	PB CrO_2	O	Playback EQ selection	CrO_2: "H"
15	BIAS	O	Bias oscillation control	During REC: "H"
16	REC MUTE	O	REC Mute control	MUTE ON: "H"
17				
18	DOLBY P/R	O	Dolby IC PB/REC selection	During REC: "H"
19	PB 1/2	O	PB 1/2 selection	Deck 2 PB: "L"
20	PULSE 2	I	Deck 2 real pulse input	
21	PULSE 1	I	Deck 1 real pulse input	
22	DAT MUTE	O	DAT OUT mute control	MUTE ON: "H"
23	SOL 2	O	Deck 2 solenoid control	SOL ON: "H"
24	MOTOR	O	Deck motor control	MOTOR ON: "H"
25	SOL 1	O	Deck 1 solenoid control	SOL ON: "H"
26	SR IN	I	Remote commander signal input	"L" ACTIVE
27	CNVss		GND	
28	RESET	I	Reset input	RESET: "L"
29	XIN		4.19 MHz Ceramic oscillator (ASS1022-A) input	
30	XOUT			
31			Not used	
32	V_{ss}		GND	
33	KO0	O	Key matrix, key scan output	
34	KO1	O	Key matrix, key scan output	
35	KO2	O	Key matrix, key scan output	
36	KO3	O	Key matrix, key scan output	
37	KO4	O	Key matrix, key scan output	
38	KI0	I	Key matrix, key scan input	
39	KI1	I	Key matrix, key scan input	
40	KI2	I	Key matrix, key scan input	

PIN NO.	Name	I/O	Function	Logic
41	KI3	I	Key matrix, key scan input	
42	KI4	I	Key matrix, key scan input	
43		I		
44	TREBLE 1	O	SFC IC (PA0049) control	
45	TREBLE 2	O		
46	BASS 1	O		
47	BASS 2	O		
48	WIDE 1	O		
49	WIDE 2	O		
50	CD REQ/EN	I/O	System bus request/enable (CD)	"L" ACTIVE
51	TX REQ/EN	I/O	System bus request/enable (Tuner)	"L" ACTIVE
52	S.DATA	I/O	Data input/output for system bus	"L" ACTIVE
53	S.CLK	O	Clock output for system bus	"L" ACTIVE
54			Not used	
55	POWER	O	Power standby/ON selection	POWER ON: "H"
56	SP RY	O	Speaker relay control	Relay ON: "L"
57	AUDITION	O	Audition ON/OFF control	Audition ON: "H"
58	MIC MUTE	O	MIC mixing mute control	MUTE ON: "H"
59	2 REC	O	Deck 2 REC LED control	LED ON: "H"
60	2 REV	O	Deck 2 REV LED control	LED ON: "H"
61	2 FWD	O	Deck 2 FWD LED control	LED ON: "H"
62	1 REV	O	Deck 1 REV LED control	LED ON: "H"
63	1 FWD	O	Deck 1 FWD LED control	LED ON: "H"

9. CIRCUIT DESCRIPTIONS

9.1 RIPPLE FILTER CIRCUIT WITH POWER ON/OFF FUNCTION


IC703 NJM7812FA
VOUT
IN
11.9
Q701
12.7
R730
C730
Q702
C708
C707
D706-D709
CN13
SUB 1
SUB 1
IC705 NJM78M56FAS
VOUT
VIN
4.9
Q707
5.6
D718
R731
C731
Q708
C709
11.5
C703
D702-705
to POWER TRANS Ass'y
SUB 2
SUB 2
Q703
R732
Q709
C706
R706
R704
C704
VOUT
VIN
-5.7
Q710
-6.5
-11.7
IC702 NJM7905FA
CN14
4
14
POWER Ass'y
STANDBY
U. +5.6V
AF, TUNNER Ass'y
CN14
4
14
D318
L303
C350
Q327
Q328
55
R411
C338
VDO
POWER
IC308
PD5147A
SYSTEM CONTROL
µ-COM

- Q701, Q707 and Q710 are set to ON/OFF by controlling Q702, Q708 and Q709.
- When 55 Pin (POWER) of the system control microprocessor IC308 (PD5147A) is made "H" or "L", followings are obtained.

55 Pin (POWER) of IC308 output	Q328	Q327	Q703	Q709	Q702	Q708	Q710	Q707	Q701	Emitter voltage (V)		
										Q710	Q707	Q701
H	ON	ON	ON	ON	ON	ON	ON	ON	ON	–5.7	4.9	11.9
L	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	0	0	0

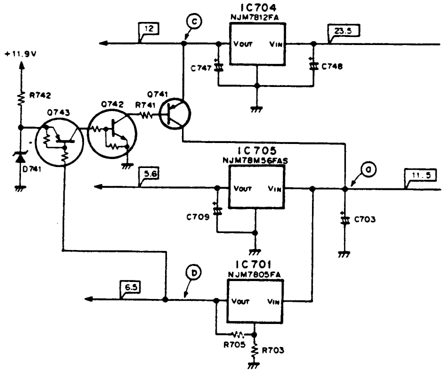
9.2 SUB–POWER SOURCE CIRCUIT

When the power voltage at the primary side of the power transformer is decreased or the load current of IC701 and IC705 are suddenly increased, the voltage at ⓐ is dropped and IC701 does not work as voltage regulator (The voltage at ⓑ is dropped). The sub–power circuit prevents this.

If the voltage at ⓐ is made high, this circuit is not required. However, considering temperature increase at each part, power consumption increase and increased cost, the voltage at ⓐ is set to be low.

The voltage at ⓑ is monitored by the base terminal of Q743.The voltage at the emitter of Q743 is kept constant by the zener diode D741. Therefore, if decreased voltage at ⓐ may decrease the voltage at ⓑ, Q743, Q742 and Q741 become ON and voltage is fed from ⓒ to ⓐ.

This keeps the voltage at ⓑ constant.


IC704
NJM7812FA
12
ⓒ
23.5
Vout
Vin
C747
C748
+11.9V
R742
Q741
Q742
R741
Q743
D741
IC705
NJM78M56FAS
5.6
ⓐ
11.5
C709
C703
IC701
NJM7805FA
6.5
ⓑ
R705
R703

The voltage waveform at ⓐ and ⓑ with sub-power source circuit connected and not connected are shown in Fig. 9–1 and 9–2.

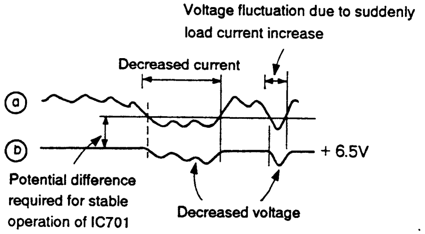


Fig. 9–1 Without Sub-power Source Circuit

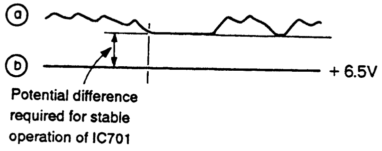
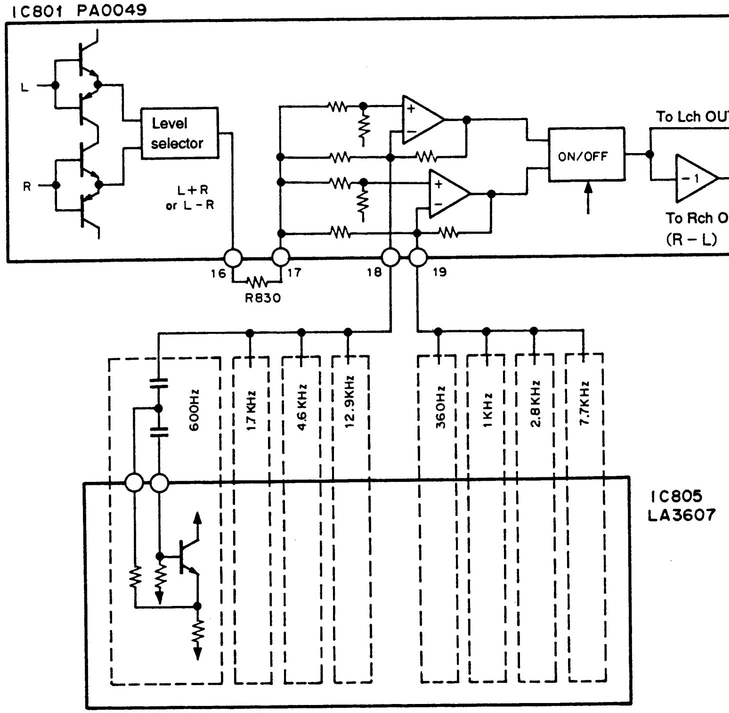


Fig. 9–2 With Sub-power Source Circuit

9.3 PHASE SHIFTER CIRCUIT

- The phase shifter circuit consists of band pass filter composed of a part of IC801 (PA0049) and IC805 (LA3607).


IC801 PA0049
L
R
Level selector
L+R or L−R
ON/OFF
To Lch OUT
−1
To Rch OUT (R − L)
16
17
18
19
R830
600Hz
1.7KHz
4.6KHz
12.9KHz
360Hz
1KHz
2.8KHz
7.7KHz
IC805 LA3607

The phase characteristics of the circuit is shown in Fig. 9–4. Normal position when actually hearing is shown in Fig. 9–3. Realism can be felt by uncertain imaginary power source of A signal in Fig. 9–4.

B signal becomes imaginary sound source outside of SP.
C signal becomes imaginary sound source inside of SP.

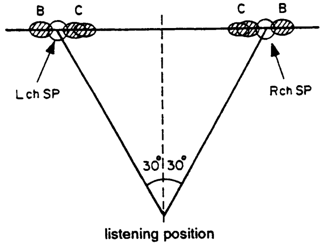

B
C
C
B
Lch SP
Rch SP
30°
30°
listening position

Fig. 9–3 Phase Shifter Frequency and Phase Characteristics

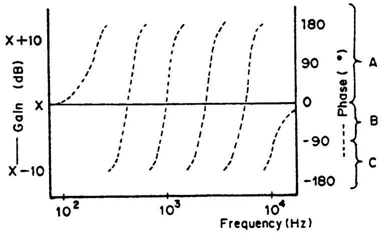
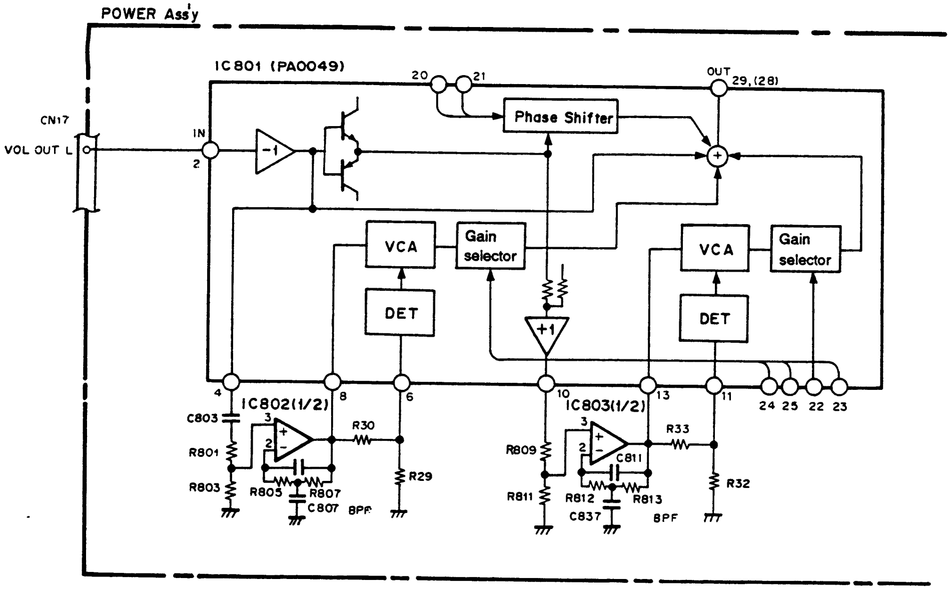


Fig. 9–4

9.4 DYNAMIC TORN CONTROL CIRCUIT


POWER Ass'y
IC801 (PA0049)
CN17
VOL OUT L
IN
2
20
21
OUT
29, (28)
Phase Shifter
-1
+
VCA
Gain selector
VCA
Gain selector
DET
DET
+1
4
8
6
10
13
11
24 25 22 23
IC802(1/2)
IC803(1/2)
C803
R801
R803
R805
R807
C807
BPF
R30
R29
R809
R811
R812
R813
C811
C837
BPF
R33
R32
3
2
+
-

Note: ( ) is for Rch.

- In XR–P310, the circuit consists of IC801 (PA0049).

The basic operation principle of this circuit is the same as the high–frequency and low-frequency area dynamic loudness of XR–P500. (See the XR–P500 service manual issued in ARP1996.)

- The table of truth value for the control system of IC801 (PA0049) is shown below.

Preset mode (H: 5V, L: 0V)

Terminal No. of IC801	DISCO	HALL	B.G.M.
20	H	L	H
21	L	L	H
22	L	H	H
23	H	L	H
24	H	L	H
25	L	–	H

Manual mode (H: 5V, L: 0V)

Terminal No. of IC801	P.BASS EQ				SURROUND & STEREO WIDE				TREBLE EQ		
	FLAT	+1	+2	–	OFF	SIMULATED STEREO	STEREO WIDE 1	STEREO WIDE 2	FLAT	+	–
20	L	L	H	H	*	*	*	*	*	*	*
21	L	H	L	H	*	*	*	*	*	*	*
22	*	*	*	*	L	H	L	H	*	*	*
23	*	*	*	*	L	H	H	L	*	*	*
24	*	*	*	*	*	*	*	*	L	H	H
25	*	*	*	*	*	*	*	*	–	L	H

Note: * means "Don't care."

10. FOR SD AND YPW TYPES

CONTRAST OF MISCELLANEOUS PARTS

NOTES:

- Parts without part number cannot be supplied.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

The XR–P310/YPW and SD types are the same as the XR–P310/KUC type with the exception of the following sections.

Mark	Symbol & Description	Part No.			Remarks
		XR–P310/ KUC type	XR–P310/ YPW type	XR–P310/ SD type	
⊙	AF.TUNER assembly	AWZ3359	AWZ3228	AWZ3227	
⊙	POWER assembly	AWZ3235	AWZ3234	AWZ3233	
⚠	AC Power cord	ADG1057	ADG–064	ADG1015	
⚠	FU703 Fuse (1A)	AEK–119	......	......	
⚠	FU702 Fuse (2A)	AEK–122	......	......	
⚠	FU701 Fuse (2.5A)	AEK–123	......	......	
⚠	FU704 Fuse (500mA)	AEK–136	......	......	
⚠	FU704 Fuse (T500mA)	......	AEK–505	AEK–505	
⚠	FU701, FU705 Fuse (T800mA)	......	AEK–507	AEK–507	
⚠	FU703 Fuse (T1A)	......	AEK–508	AEK–508	
⚠	FU702 Fuse (T2A)	......	AEK–511	AEK–511	
⚠	Power transformer (AC120V)	ATS1330	......	......	
⚠	Power transformer (AC240V)	......	ATS1328	......	
⚠	Power transformer (AC110/120–127/220/240V)	......	......	ATS1329	
⚠	Voltage selector	......	......	AKX–507	
	Knob (Mic MixVOL)	......	AAB1219	AAB1219	
	Front panel assembly	AMB1770	AMB1773	AMB1773	
	Bonnet	ANE1294	ANE1281	ANE1281	
	Operating instructions (Spanish)	......	......	ARC1252	
	Operating instructions (French)	ARC1285	......	......	
	Packing case	AHD2099	AHD2004	AHD2004	
	1 mechanism unit	EXK2040	EXK2020	EXK2020	
	2 mechanism unit	EXK2030	EXK2010	EXK2010	

Note:

- 1 mechanism unit (EXK2020) is the same as the 1 mechanism unit (EXK2040) except for the method of fixing springs. (using adhesive or not)
- 2 mechanism unit (EXK2010) is the same as the 2 mechanism unit (EXK2030) except for the method of fixing springs. (using adhesive or not)

⊙ AF.TUNER ASSEMBLY (AWZ3228 and AWZ3227)

The AF.TUNER assemblies (AWZ3228 and AWZ3227) are the same as the AF.TUNER assembly (AWZ3359) with the exception of the following sections.

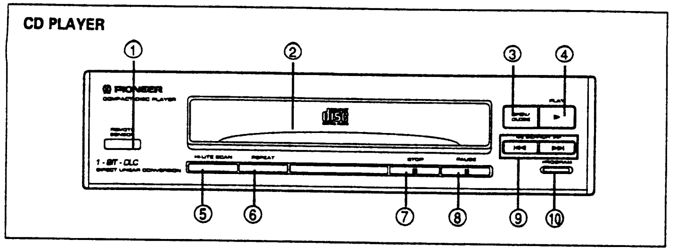
Mark	Symbol & Description	Part No.			Remarks
		AWZ3359	AWZ3228	AWZ3227	
	IC310	......	RC4558DXP	RC4558DXP	
	Q333	......	XDA143ES	XDA143ES	
	Q334	......	2SC2458	2SC2458	
	C243, C244	CKSQYB122K50	CKSQYB102K50	CKSQYB102K50	
	C255, C256	CKDYB822K50	CKDYB682K50	CKDYB682K50	
	S101 Slide switch	ASH1027	......	......	
	R417	......	RS1/10S102J	RS1/10S102J	
	R418	......	RD1/8PM102J	RD1/8PM102J	
	R437–R439, R441, R442	......	RS1/10S682J	RS1/10S682J	
	R443, R444	......	RS1/10S392J	RS1/10S392J	
	R440	......	RD1/8PM682J	RD1/8PM682J	
	R447	......	RS1/10S473J	RS1/10S473J	

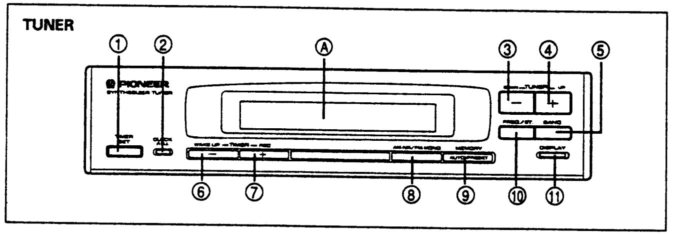
⊙ POWER ASSEMBLY (AWZ3234 and AWZ3233)

The POWER assemblies (AWZ3234 and AWZ3233) are the same as the POWER assembly (AWZ3235) with the exception of the following sections.

Mark	Symbol & Description	Part No.			Remarks
		AWZ3235	AWZ3234	AWZ3233	
	IC703	UPC78M12AHF	NJM7812FA	NJM7812FA	
	IC771	ICP–N38	......	......	
	IC791	......	RC4558DXP	RC4558DXP	
	C718	CEAS101M50	CEAS101M35	CEAS101M50	
	C791	......	CKDYF103Z50	CKDYF103Z50	
	C792	......	CEAS010M50	CEAS010M50	
	C793	......	CCDSL680J	CCDSL680J	
	C794	......	CEAS100M25	CEAS100M25	
	C795	......	CEAS0R1M50	CEAS0R1M50	
	C796–C798	......	CKDYF473Z50	CKDYF473Z50	
	C863	CEAS470M50	CEAS470M35	CEAS470M50	
	R1	RS2LMF1R5J	......	......	
	R51 (2.2M, 1/2W)	ACN–208	......	......	
	R791	......	RD1/8PM222J	RD1/8PM222J	
	R792, R797	......	RD1/8PM104J	RD1/8PM104J	
	R793	......	RD1/8PM103J	RD1/8PM103J	
	R794	......	RD1/8PM681J	RD1/8PM681J	
	R795	......	RD1/8PM224J	RD1/8PM224J	
	R796	......	RD1/8PM102J	RD1/8PM102J	
	R797	......	RD1/8PM104J	RD1/8PM104J	
	R798	......	RD1/8PM100J	RD1/8PM100J	
	VR791 (MIC LEVEL)	......	ACS1064	ACS1064	
	J791 (MIC jack)	......	AKN1017	AKN1017	

11. PANEL FACILITIES



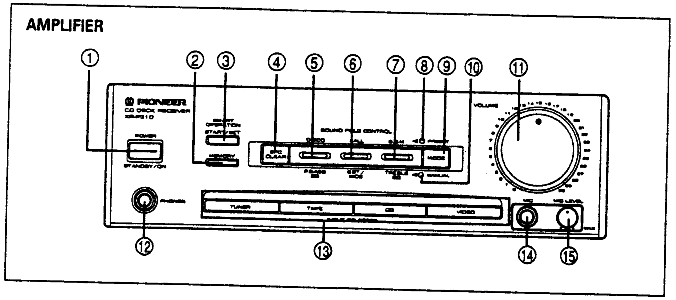


CD PLAYER

- ① **REMOTE SENSOR window**
- ② **Disc tray**
- ③ **OPEN/CLOSE button**
- ④ **PLAY button (►)**
- ⑤ **HI-LITE SCAN button**
- ⑥ **REPEAT button**
- ⑦ **STOP button (■)**
- ⑧ **PAUSE button (❚❚)**
- ⑨ **SEARCH buttons (◄◄/►►, ❙◄◄/►►❙)**
- ⑩ **PROGRAM button**

TUNER

- ① **TIMER SET button**
- ② **CLOCK ADJ. button**
- Ⓐ **Display**
- ③ **TUNER DOWN/– button**
- ④ **TUNER UP/+ button**
- ⑤ **BAND button**
- ⑥ **TIMER WAKE-UP/– button**
- ⑦ **TIMER REC/+ button**
- ⑧ **AM-NR/FM-MONO button**
- ⑨ **MEMORY/AUTO PRESET button**
- ⑩ **FREQ./ST. button**
- ⑪ **DISPLAY button**



AMPLIFIER

① **POWER STANDBY/ON switch**

This is the switch for electric power.

ON: When set to the ON position, power is supplied and the unit becomes operational.

STANDBY: When set to the STANDBY position, the main power flow is cut and the unit is no longer fully operational. A minute flow of power feeds the unit to maintain operation readiness. (The display shows only the time.)

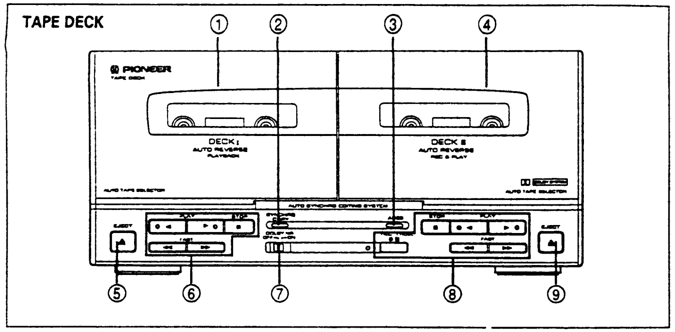
- ② **SMART OPERATION MEMORY button**
- ③ **SMART OPERATION START/SET button**
- ④ **SFC CLEAR button**
- ⑤ **DISCO/P.BASS EQ button**
- ⑥ **HALL/S.ST./WIDE button**
- ⑦ **B.G.M./TREBLE EQ button**
- ⑧ **PRESET mode indicator**
- ⑨ **MODE button**
- ⑩ **MANUAL mode indicator**
- ⑪ **VOLUME control**
- ⑫ **Headphones jack (PHONES)**
- ⑬ **INPUT SELECTOR buttons (TUNER/TAPE/CD/VIDEO)**
- ⑭ **Microphone jack (MIC) (Except for U.S. and Canadian models)**
- ⑮ **MIC LEVEL control (Except for U.S. and Canadian models)**

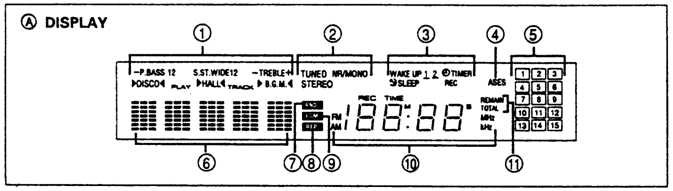
Auto Function

This model is equipped with "Auto Function" operation, so when the switch for CD PLAY, RANDOM, PLAY (tape), TUNER UP/DOWN (+/–) or BAND is pressed, the function switches automatically. Use the VIDEO function button to select the component connected to the VIDEO jacks, since Auto Function is not effective for this.

NOTE:

The function cannot be switched during recording except for tape copying. (Auto Function does not operate either.)





TAPE DECK

① **DECK I cassette door**
② **SYNCHRO COPY button**
③ **ASES (Auto Synchro Editing System) button**
④ **DECK II cassette door**
⑤ **DECK I EJECT button (▲)**
⑥ **DECK I operation buttons (PLAY ◄ ►, STOP ■, FAST ◄◄ ►►)**
⑦ **DOLBY* NR switch**
⑧ **DECK II operation buttons (PLAY ◄ ►, STOP ■, FAST ◄◄ ►►, REC PAUSE ● II)**
⑨ **DECK II EJECT button (▲)**

Ⓐ DISPLAY

① **Sound field control indicators**
Display SOUND FIELD CONTROL settings.

② **Tuner indicators**
Indicate the tuning mode.

③ **Timer indicators**
Display timer settings.

④ **A.S.E.S. (Auto Synchro Editing System) indicator**
Lights when A.S.E.S. is performed.

⑤ **Music calendar**

⑥ **Function display**
Displays the selected function. In the TUNER mode, this displays the station No., and when playing a CD it displays the track No.

⑦ **Random indicator**

⑧ **Repeat indicator**

⑨ **Program indicator**

⑩ **Frequency/Time display**
In TUNER mode, frequency is displayed. In any other mode it displays the time.

⑪ **REMAIN/TOTAL indicator**
In CD mode, "REMAIN" shows the remaining play time and "TOTAL" shows the total play time.

* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
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12. SPECIFICATIONS

Continuous Average Power Output is 20 Watts* per channel, min., at 8 ohms from 50 Hertz to 20,000 Hertz with no more than 0.9 % total harmonic distortion.

Continuous Power Output (RMS)	27 W + 27 W (1 kHz, T.H.D. 5%, 8 Ω)
Hum & Noise (DIN, Continuous Power/50 mW)	68 dB/60 dB
Total Harmonic Distortion (40 Hz to 20,000 Hz, 12.5 W, 8 ohms)**VIDEO	No more than 0.2%
(Multi-voltage models only) Music Power (DIN)	37 W + 37 W
Peak Music Power	200 W

FM/AM tuner section

FM Tuner Section

Frequency Range	87.5 MHz to 108 MHz
Usable Sensitivity	Mono: 12.8 dBf, IHF (1.2 μV/75 ohms)
Sensitivity (DIN)	Mono S/N 26 dB: 1 μV/75 Ω Stereo S/N 46 dB: 50 μV/75 Ω
Signal-to-Noise Ratio (IHF, 85 dBf Input)	Mono: 77 dB Stereo: 73 dB
Signal-to-Noise Ratio (DIN)	Mono: 66 dB Stereo: 60 dB
Distortion	Stereo: 0.5 % (1kHz)
Antenna Input	75 ohms unbalanced

AM Tuner Section

Frequency Range	
With 10 kHz step	530 kHz to 1,700 kHz
With 9 kHz step	531 kHz to 1,602 kHz
Sensitivity (IHF, Loop antenna)	350 μV/m
Antenna	Loop Antenna

CD Section

Type	Compact disc digital audio system
Wow and Flutter	Limit of measurement (±0.001% W.PEAK) or less (EIAJ)

Cassette deck section

Systems	4 track, 2-channel stereo
Heads	Recording/playback head x 1 Playback head x 1 Erasing head x 1
Motor	DC servo motor x 2
Wow and Flutter	No more than 0.09 % (WRMS)
Frequency Response (-20 dB recording):	
CrO₂ tape	35 Hz to 15,000 Hz ±6 dB
Normal tape	35 Hz to 14,000 Hz ±6 dB
Signal-to-Noise Ratio	
Dolby NR OFF	56 dB
Noise Reduction Effect	
Dolby B type NR ON	More than 10 dB (at 5 kHz)

Miscellaneous

Power Requirements	
Australian model	a.c. 240 Volts, 50/60 Hz
Multi-voltage models	AC 110/120 – 127/220/240 V (switchable), 50/60 Hz
U.S. and Canadian models	AC 120 V, 60 Hz
Power Consumption	
U.S. and Canadian models	70 W
Other destination models	150 W
Dimensions	260 (W) x 310 (H) x 295 (D) mm 10-4/16 (W) x 12-3/16 (H) x 11-10/16 (D) in
Weight (without package)	8.0 kg (17 lb 10 oz)

Accessories

Operating Instructions	1
Remote Control Unit	1
Dry Cell Batteries (AAA/R03)	2
FM Antenna	1
AM Loop Antenna	1

NOTE:
Specifications and design subject to possible modification without notice due to improvements.

* Measured pursuant to the Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifier.
** Measured by audio spectrum analyzer.

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